40 Rock

POPULAR Computing WEEKLY

40p

5-11 July 1984 Vol 3 No 27

BRITAIN'S BEST-SELLING MICRO WEEKLY

STAR GAME
Chasm on 16K Spectrum
see page 10

News Desk

Bitter split breaks Imagine

IMAGINE, the flamboyant Liverpool software company whose financial problems have been deepening since February, is now insolvent

Magazine publishers VNU petitioned for a winding up order to be brought against the company on Monday, July 2

The crisis means that the future of Imagine's two Megagames is now uncertain

The situation has been exacerbated by a bitter internal split between general manager Bruce Everiss and his co-directors Ian Hetherington and Dave Lawson The position of Imagine's other director Mark Butler is still not clear Bruce Everiss resigned as director and general manager at midday on Friday, June 29

Central to the disagreement is a new company called Finchspeed set up by Hetherington and Lawson to raise funds Hetherington, Lawson and Mark Butler each have a one third share in the new company

"They have set up Finchspeed in order to own Imagine's Megagames and assets for themselves claimed Everiss "They have a staff list of 20 people to join Finchspeed which means that the remaining 60 Imagine employees will

continued on page 5

Imagine's cofounders Mark Butler (left) and Dave Lawson

Tramiel ready to buy Atari

JACK Tramiel Commodore's founder who resigned suddenly in January, now looks set to buy Atari

No details of the proposed deal are yet available but Warner Communications of which Atari is a subsidiary is negotiating to sell the Atari Home Video and Home Computer Divisions to a new company set up by Tramiel retaining only Atari's Coin-operated Game Division

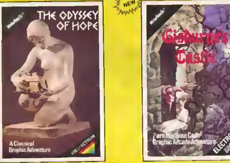
Warner Communications has been seeking a buyer for its loss-making subsidiary for almost a year It originally bought Atari from its founder Nolan Bushnell in 1976 for $28m and in 1982 the subsidiary turned in an operating profit of $358m However the slump in US video game and home computer sales lead the company to produce an operating loss the following year of $538 6m

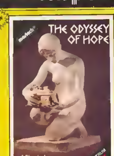
The heavy trading losses have reduced Atari's worth and the company is now valued between $40 and $120m

This Week

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Articles which are submitted for publication should not be more than 3 000 words long. All articles and any accompanying programs should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here — so please do not be tempted

Accuracy
Popular Computing Weekly cannot accept any responsibility for any errors in programs we publish although we will always try our best to make sure programs work

This Week

Editorial

Everybody knows that home copying takes place on a huge scale And the software houses have had to accept it because there is nothing they can do

Tape copier programs — the sole purpose of which is to unlock any program protection built into a commercial package making copying easier — are an easy focus for the larger of the software houses

Justifiably too — companies selling tape copiers are parasitic Indeed, they may even be inciting people to commit a breach of copyright law

Software houses threatened to boycott the last ZX microfair if companies selling tape copiers were allowed to exhibit. This magazine doesn't carry ads for tape copiers, partly because it doesn't seem right to do so But now there is a new and even trickier question to be debated the question of tape-to-Microdrive and tape-to-disc copiers

Unlike tape copiers, these cross-medium copiers have a purpose other than piracy Anyone who has bought a ZX Microdrive or disc drive will wish to transfer their programs onto the new medium Tape to-microdrive or disc-copiers make this possible

A desire to transfer software from tape to a more convenient form is entirely justified The problem is that, having made one microdrive or copy, you can make another, and another

As yet there is no satisfactory answer to the problem Sinclair sent a letter to all the software houses instructing them to include a Microdrive copy facility in their cassette software — a suggestion which was met with a stony silence Acorn had by far a better idea of offering discounts on disc software whenever the original cassette version was returned

So far only the Acorn system looks remotely workable And until such time as a solution is found the existence of cross-medium copiers is justifiable because they fulfill a genuine need

Imagine

continued from page 1

simply be discarded

"Ian Hetherington and Dave Lawson are in the States to raise funds for Finchspeed Imagine will not see this money "

Speaking from the US on June 29 Ian Hetherington refuted this "Dave Lawson and myself have been in Silicon Valley trying to raise money for Imagine for the last two weeks We set up Finchspeed as an off the-shelf company to get money into Imagine "There is no point in discussing Finchspeed, since it is dead and buried It's forgotten "

However at an extraordinary General Meeting of Imagine's shareholders on July 1 a contract between Imagine and Finchspeed was approved by a majority of those present

This contract gives Finchspeed the copyright of the Megagames and the use of Imagine's premises and Imagine's assets Finchspeed will pay Imagine £40 000 for equipment needed to develop the Mega games and then 50 per cent of the net profit from the games up to a maximum of £625,000

The question is whether the deal will save Imagine "At present, Imagine owe about £400 000," said Bruce Everiss "That includes £100,000 to the bank and £250,000 to Marshall Cavendish "

Ian Hetherington would not comment on the figures, other than to say that the figure for the overall amount owed is incorrect He added "We are hoping to raise £1 5m in the States, and this will cover all the debts and pay for the Megagames We have been very close to clinching deals It is important that the Mega games go out with Imagine's name on them, and I will do anything to ensure that they do "

As for the 60 staff left without a job according to Everiss, Hetherington commented, 'Staff will have to be sacked who are now loyal to Bruce Everiss " He added that the personality clashes within the company had been brewing for about three months

Imagine's two Megagames were originally planned to be launched with an extensive and distinctive promotional campaign Marble slabs were to be laid in Hyde Park with the names of the games etched into them and the BBC were filming a documentary on their making

Galactic join Mastertronic

MASTERTRONIC, the software company whose £1 99 games have proved extremely successful, have set up a joint venture company with Galactic Software

"The new company is called Artificial Intelligence Products or AIP," said Martin Alper managing director of Mastertronic "It will function as a programming house for new Mastertronic games "

The deal constitutes a virtual takeover for Mastertronic, since Galactic now no longer exist as a marketing entity "Galactic did a lot of programming work for us in our early days," continued Martin "AIP will give us a much wider range of software".

The first two games from the AIP team will be launched in two to three weeks — *Chiller* (which is loosely based on Michael Jackson's *Thriller* video) for Commodore 64, and *Psycho Shopper* for the expanded Vic 20

New Apricot under £1000

ACT has announced a new range of computers with the lowest-priced model costing under £1000

At £915, the Apricot F1E uses the 8086 processor and offers 128K Ram a single 3½-inch disc drive and bundled software including CP/M-86, Basic and Logo

Bargain Beeb

ACORN is running a promotional offer on BBC B machines for the month of July

For £399, the normal cost of the micro, buyers will also recieve a BBC data recorder and five free Acornsoft programs

This is the first time Acorn has been involved in any special offers regarding its machines

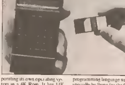
"July is a particularly slack time of year," commented an Acorn spokesman ' It is hoped that we can generate extra sales from the promotion "

The computer in your pocket

PSION — having written the four programs to accompany the QI — has now launched its own computer

The Psion Organiser is smaller than a paperback book, costs under £100, runs off an ordinary PP3 battery and is claimed to be "the world's first practical pocket computer"

It uses a Hitachi 6301-X processor which is a complete micro-on a chip device incor-



porating its own operating system in a 4K Rom It has 14K Ram on board but the device includes two built in "solid state drives ' These are twin CMOS Eprom cartridge slots for plugging in additional software They have storage capacity of either 8K (£12 50) or 16K (£19 95)

Where the Organiser is unique, however, is that it can write to these Eproms Incorporated in the unit is the ability to 'blow' software into any blank cartridge plugged into the device Information on existing cartridges can also be erased in the same way Rerecording onto a used cartridge is not possible though and to do so the cartridge must be reformatted either by a shop (£3 50) or by the individual using a special formatting device (£45).

Either of the cartridges can be removed and a special interface can be connected giving the Organiser a standard RS232C interface This can be used to printout information to a printer or to dump data to another computer possibly even via a modem and telephone link

The basic machine at £99 95 provides five commands *Save Find, Erase* and *Enter* which allows data to be stored and retrieved from any cartridge The fifth *Calc* gives a calculator facility

Psion is also offering, initially, a choice of three prerecorded software packs each priced at £29 95 These are *Maths, Financial* and *Science* packs All three incorporate a new programming language written specially by Psion for the Organiser called Popl Popl provides and additional 14 commands including *If Goto Print, Copy, Free* and *Label* Popl is a procedure-based language rather like Logo

The Psion Organiser will be sold initially by mail-order beginning in July The company is at present manufacturing between three and four thousand machines a month and does not anticipate selling it through stores until 1985

The machine will also go on sale in the US in Spring 1985 and Psion has established Psion Inc a US subsidiary based in Fairfield County, Connecticut headed up by a former Timex employee, Bill Skyreme

Psion has also announced that enhanced versions of its QL packages will be launched in August for the IBM PC and XT, the Apricot machines, and the Sirius and Victor Versions for the Apple Macintosh and Dec Rainbow will follow in the Autumn All the so-called Xchange packages will sell for over £500

Psion plans a share flotation onto the USM in Spring 1985

Lord of the Rings to follow Hobbit

NEARLY two years after the release of *The Hobbit* adventure game, Melbourne House is able to begin work on a version of *The Lord of the Rings*

Until recently the video rights to Tolkien's triology the sequel to *The Hobbit*, belonged to the US company Fantasy Films, who produced an animated film of part of *The Lord of the Rings*

Now, however, the rights have been acquired by Allen and Unwin, publishers of both of the Tolkien books, which has given Melbourne House an option for a computer game version of *The Lord of the Rings*

As with *The Hobbit*, Allen and Unwin and Melbourne House will work in close collaboration

"Melbourne House will have editorial control over the game, within the rough guidelines but obviously we will be closely involved on questions of concept and design," said David Fielder editorial director of Allen and Unwin

Allen and Unwin is not discounting the possibility of supplying books to accompany the game "Providing the three books with one game would be unfeasible — in fact, I suspect a computer game on *The Lord of the Rings* in its entirety would also be impossible It is more likely that more than one game will be produced together with more than one book, continued David

Melbourne House's publicity manager, Paula Byrne, confirmed that Melbourne House would be taking up its option on *The Lord of the Rings*

"It will be a long time before any game based on the work appears," she said "Because the option has only just been agreed we have not yet begun to consider how we will approach it"

■ Melbourne House has also confirmed September 11 as the date set for the launch of the long-awaited *Sherlock Holmes* for the Spectrum and Commodore 64

Palace play dead

PALACE Software has launched *The Evil Dead*, an arcade strategy game based on the notorious film of the same name

The game follows the plot of the film fairly closely The user controls one of the group of five friends staying in a lonely Tennessee shack only to find themselves turned into zombies and ghouls by the curse of the Evil Dead who inhabit the house

You must use objects you find scattered in the house to attack and thwart the evil spirits to save your companions

The Evil Dead should be available by the end of July on the Commodore 64 at £6 99 Versions for BBC B and Spectrum will follow

Baxter leaves Commodore

COMMODORE UK will be facing a major reshuffle in August The company is moving premises from its present offices in Slough to the new plant in Corby

There will be several changes of staff, the most notable of which will be marketing director John Baxter's departure to Andromeda Software

John Baxter

"John will be taking up a position as a director of Andromeda to the end of August," said a Commodore spokesman

Red Shift slugs it out

RED Shift the war games specialist company has suffered a split The five-strong programming team — - Julian Fuller, Julian Gollop, Clive Norman, Helmut Watson and Joe Capricorn — has set up a freelance group, to be called Slug

"We will now be selling our games to other companies While we will continue with war games we hope to branch out into strategy games in general," said Julian Fuller

Negotiations with The Games Workshop and K-Tel are currently in progress and Slug will be writing two games — Battlecars *and* Talisman *on the Spectrum for The Games Workshop The games are due for release in Spring 1985*

Left to right Julian Fuller Clive Norman, Helmut Watson

Amstrad gets JSW

SOFTWARE Projects will be converting its top-selling games *Manic Miner* and *Jet Set Willy* for the Amstrad CPC 464

QL upgrade — date set

SINCE Sinclair began deliveries of the QL at the beginning of May three different versions of Superbasic have been sent out with machines

"The first version issued to customers was FB, which was a penultimate version of the firmware," said a Sinclair spokesman

"The other versions PM and AH, are almost identical, but AH is the final version, and an improvement on the others"

To find out which variant is on a given machine, users should type in *Print Ver$* The name of the variant should appear on the display

Sinclair began delivery two weeks ago of QLs with the Eprom inside the machines rather than inserted in the Rom cartridge slot

Machines delivered from the end of July should have the Superbasic in Rom rather than Eprom

The conversion of QLs with 'dongle' Eproms is also scheduled to begin at the end of July.

"Our intention is to stagger the recall of machines," the spokesman continued "and as yet, we do not know how long customers will be without their QLs when recalled The service will be absolutely free to customers"

Star turn for Mirrorsoft

MIRRORSOFT is the latest company to produce an astronomy program — *Starseeker* for the BBC — which has been given a seal of approval by the London Planetarium

The program will give astronomical data on any chosen star, as well as the usual night sky screen

It will also output data on the planets and trace the path of Halley's comet, in time for the comet's next appearance in 1985

"The program was written by Paul Phillips a Fellow of the Royal Astronomical Society said Mirrorsoft general manager Jim Mackonochie "We were so impressed with it that we took it to the Planetarium to hear their views"

Apart from giving advice and comment, a member of the Planetarium will also be writing the foreword to the manual accompanying *Starseeker*

Chasm

If what's lurking down in the Chasm turns out not to be friendly then you will have only your 16K Spectrum and R Grimwood to blame

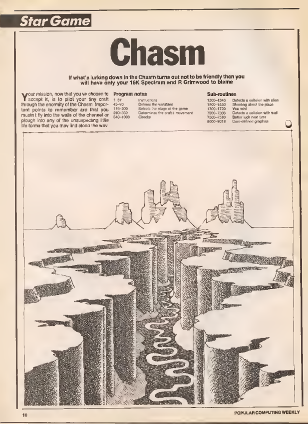
Your mission, now that you've chosen to accept it, is to pilot your tiny craft through the enormity of the Chasm. Important points to remember are that you mustn't fly into the walls of the channel or plough into any of the unsuspecting little life forms that you may find along the way.

Program notes

1–37	Instructions
45–90	Defines the variables
115–200	Selects the stage of the game
280–330	Determines the craft's movement
340–1000	Checks

Sub-routines

1300–1340	Detects a collision with alien
1500–1530	Shooting about the place
1700–1720	You win!
7200–7300	Detects a collision with wall
7500–7580	Better luck next time
8000–8018	User-defined graphics



```
   1 REM ************************
   2 REM *        CHASM         *
   3 REM *                      *
   4 REM * © R.Grimwood 1983 *
   5 REM ************************
   6 GO SUB 8000
   7 BORDER 0  PAPER 0  INK 7
   8 CLS  PRINT FLASH 1,
The CHASM.
   9 PRINT AT 0,7, © R.Grimwood
1983"
  10 PRINT  ''Welcome to the cha
sm.
  11 PRINT ''You have just compl
eted the      elimination of all
the aliens    from your kingdom,h
owever you    have just learnt of
 the exist-   ance of a couple mo
re,seeking    refuge in the chasm
 only a few   miles from the city
.
  15 PRINT ''your task is to eli
minate these few remaining alien
s & you must  pilot your ship dow
n the chasm   whilst destroying t
hem.
  20 PRINT ''The chasm narrows a
s your        mission continues &
 the aliens   become more profuse

  22 PRINT #1,'Press  m   for mo
re"
  23 IF INKEY$<> m  THEN GO TO 2
3
  25 CLS  PRINT  'You must avo
id the sides of the chasm,if you
 hit them however  you will loo
se one of your 3   lives.After
a crash you must   start steeri
ng away from the   sides immedi
ately or you will  hit them aga
in.You will also   loose a life
 if you hit an alien
  27 PRINT  'You will be informe
d of your    score when you die
& when you   change stages.'
  28 PRINT  ' s-x Up-down
     -a-     o-p Left-right
  to fire'
  30 PRINT ' '            GOOD LU
CK
  33 PRINT #1,"Press "p  to star
t'
  35 IF  INKEY$<> p  THEN GO TO
35
  37 CLS
  40 GO SUB 8000
  45 BORDER 0  PAPER 2  INK 0
  50 LET z=7  LET a=8  LET s=1
LET d=11
  55 LET l=3  LET sc=0  LET w=21
  60 PAPER 0
  65 FOR g=0 TO 20  PRINT INK 0,
'  NEXT g
  70 LET a$='
  75 LET b$=      "
  80 LET c$=   .
  85 LET d$='    .
  90 LET e$=
  95 FOR f=1 TO 20  PLOT INK 7,I
NT (RND*255),INT (RND*150)  NEXT
 f
 100 FOR r=1 TO 999999999  POKE
23692,255
 105 LET x=INT (RND*3)-1
 110 PAPER 0
 111 PRINT OVER 0, INK 6, PAPER
0,AT s,d, V
 112 PRINT OVER 0, INK 5, PAPER
0,AT s,d,
 115 IF r<=200 THEN PRINT AT w,a
, INK 2,a$
 120 IF r>200 AND r<=400 THEN PR
INT AT w,a, INK 2,b$
 125 IF r=200 THEN GO SUB 1600
BEEP 1,0  LET z=z-1  FOR f=1 TO
10  BEEP .1,5  NEXT f
 130 IF r>400 AND r<=600 THEN PR
INT AT w,a, INK 2,c$
 135 IF r=400 THEN GO SUB 1600
BEEP 1,0  LET z=z-1  FOR f=1 TO
10  BEEP .1,5  NEXT f
 140 IF r>600 AND r<=800 THEN PR
INT AT w,a, INK 2,d$
 150 IF r=600 THEN GO SUB 1600
BEEP 1,0  LET z=z-1  FOR f=1 TO
10  BEEP .1,5  NEXT f
 160 IF r>800 AND r<1500 THEN P
RINT AT w,a, INK 2,e$
 170 IF r=800 THEN GO SUB 1600
BEEP 1,0  LET z=z-1  FOR f=1 TO
10  BEEP .1,5  NEXT f
 200 IF r>1500 THEN FOR f=-30 TO
45  BEEP .05,f  NEXT f  FOR f=4
5 TO -35 STEP -1  BEEP .03,f  NE
XT f  GO TO 1700
 260 PAPER 2
 265 PRINT
 270 LET a=a+x
 280 IF a<1 THEN LET a=1
 285 IF a>25 THEN LET a=25
 290 LET d=d+(INKEY$="p")-(INKEY
$="o")
 295 LET s=s+(INKEY$="x")-(INKEY
$="s")
 300 IF s>21 THEN LET s=21
 310 IF s<0 THEN LET s=0
 320 PRINT OVER 0, INK 6, PAPER
0,AT s,d, V
 330 PRINT OVER 0, INK 5, PAPER
0,AT s,d,
 340 IF ATTR (s+1,d)= 16 THEN GO
TO 7200
 350 IF ATTR (s+1,d)=4 THEN GO S
UB 1300
 360 LET q=INT (RND*4)  IF q=2 T
HEN GO SUB 1200
 900 IF INKEY$= a  THEN GO SUB 1
500
1000 NEXT r  GO TO 100
1200 PRINT AT w-1,INT (RND*z)+a,
 INK 4, PAPER 0,'@  BEEP .003,4
0
1220 RETURN
1300 PRINT AT s+1,d, FLASH 1, PA
PER 0, INK 2, BRIGHT 1,'*
1305 LET l=l-1
1310 PRINT AT 0,5, PAPER 7, INK
0, SCORE=",sc,AT 0,20, LIVES= ,l
1320 FOR f=1 TO 10  FOR j=1 TO 2
 BEEP .002,15  BEEP .003,10  NE
XT j  FOR j=1 TO 2  BEEP .003,5
 BEEP .004,0  NEXT j  NEXT f
1330 IF l=0 THEN GO TO 7500
1340 PRINT AT s+1,d, FLASH 0, PA
PER 0, BRIGHT 0,'  RETURN
1500 LET e=s  LET n=d
1501 FOR f=55 TO 0 STEP -7  BEEP
.001,f  NEXT f
1502 PRINT AT e+1,n, INK 6, PAPE
R 0,'|
1503 LET e=e+1
1505 PRINT AT e,n, PAPER 0,  '
1510 IF e>20 THEN LET e=20  RETU
RN
1515 IF ATTR (e+1,n)=16 THEN RET
URN
1520 IF ATTR (e+1,n)=4 THEN LET
sc=sc+100  PRINT AT e+1,n  INK 5
, PAPER 0,'*  BEEP .1,0  PRINT
AT e+1,n, PAPER 0,  '  RETURN
1525 GO TO 1502
1530 RETURN
1600 PRINT AT 0,5, PAPER 7, INK
0, SCORE= ,sc,AT 0,20, LIVES= ,l
1601 RETURN
1700 CLS  FOR d=0 TO 5  POKE 23
692,255  FOR f=0 TO 7  PRINT INK
[illegible]
[illegible] NEXT f  NEXT d
1710 CLS  PRINT [illegible] PAPER [illegible],
          CONGRATULATIONS

1720 PRINT     You have successfu
lly completed            THE C
HASM
1730 PAUSE 100  GO TO 7500
7200 LET l=l-1
7220 PRINT AT 0,5, PAPER 7, INK
0, SCORE= ,sc,AT 0,20, LIVES= ,l
7230 FOR f=45 TO 35 STEP -1  BEE
P .01,f  NEXT f  FOR f=25 TO 35
 BEEP .01,f  NEXT f  FOR f=35 TO
 15 STEP -1  BEEP .01,f  NEXT f
 FOR f=5 TO 15  BEEP .01,f  NEXT
 f
7240 FOR f=6 TO -5 STEP -1  BEEP
 .01,f  NEXT f  FOR f=-16 TO -5
 BEEP .01,f  NEXT f
7250 FOR f=1 TO 5  FOR g=-40 TO
-45 STEP -1  BEEP .01,f  NEXT g
 NEXT f
7260 IF l=0 THEN GO TO 7500
7300 GO TO 235
7500 PAUSE 40  CLS  PAPER 0  BO
RDER 0  INK 7  FOR g=50 TO -10 S
TEP -1  BEEP .0075,g  NEXT g  FO
R h=1 TO 20  BEEP .004,10  NEXT
h
7510 PRINT INVERSE 1 AT 10 0, SC
ORE= ,sc
7550 PRINT #1,"another try?(y/n)

7560 IF INKEY$="y" THEN CLS  GO
 TO 40
7570 IF INKEY$="n" THEN STOP
7575 GO TO 7560
7580 CLS
8000 POKE USR "n"+0,BIN 10000001
8001 POKE USR "n"+1,BIN 01000010
8002 POKE USR "n"+2,BIN 01100110
8003 POKE USR "n"+3,BIN 01111110
8004 POKE USR "n"+4,BIN 01111110
8005 POKE USR "n"+5,BIN 00100100
8006 POKE USR "n"+6,BIN 00111100
8007 POKE USR "n"+7,BIN 00011000
8010 POKE USR "t"+0,BIN 10010010
8011 POKE USR "t"+1,BIN 01010100
8012 POKE USR "t"+2,BIN 00000000
8013 POKE USR "t"+3,BIN 11010110
8014 POKE USR "t"+4,BIN 00000000
8015 POKE USR "t"+5,BIN 01010100
8016 POKE USR "t"+6,BIN 10010010
8017 POKE USR "t"+7,BIN 00000000
8018 RETURN
```

Beyond midnight

Graham Taylor talks to Terry Pratt of Beyond Software

Until recently Beyond were yet another software house that seemed destined for a pretty quick oblivion — it was spending a lot of money on adverts for games that were, at best, average and at worst terrible

We journalists (all knowing beings from the plane of darkness) sniggered to ourselves and put them on the vast list of 'companies most likely to (go broke)

But then came two games that changed all that. *Psytron* and *Lords of Midnight* were both games of great technical excellence — more than that they were genuinely original and great fun to play In fact, people are only starting to scratch the surface of *Lords of Midnight*, new possibilities are being discovered and new ways of playing it are being developed.

It seems like something went right but in point of fact nothing ever went wrong "The first games were always a preliminary stage just to test the water, Beyond only really took on any staff in April." explains Terry Pratt the manager of Beyond and the person responsible for its setting up and overall development.

Terry is a classic example of putting your money where your mouth is, (actually someone else s money but his credibility) Prior to Beyond he was the editor of the still flourishing *Computer and Video Games* magazine "I suggested vaguely to the powers that be the idea of doing some software after seeing the quality of some of the stuff we were getting in on the magazine but I never expected to be looking after a separate company!" Most of Beyond's early releases were written by a C & VG contributor Ron Potkin

"I will admit that one thing that spurred me on was, when I was on the magazine, the hash I had seen other people make of running a software house — I thought I could do it better We re succeeding now but it certainly was much more difficult than I thought"

> **"... I thought I could do it better"**

First of the 'biggy games was *Psytron*, a complex game with no real antecedents In a way it does for strategy/managerial games what *Valhalla* did for adventure games, ie, make them strongly visual with detailed, animated graphics without losing the original strategy flavour

"Psytron was fought over by a number of companies and for various reasons its creators chose us rather than another company " One of the companies known to have seriously considered *Psytron* was Psion although in the event they seem to have decided it wasn't right for them

"Paul Voysey, one of the creators of the *Psytron*, says that they consider the game to have been their *Space Invaders* and they are now at work on *Psi Warrior* which will be their *Manic Miner*, but I know companies always say things like that ..."

His voice trails off apologetically — it can t be easy having been a hack (cynical to the last man) and now required to do interviews as a manager (ebullient, enthusiastic, self and company promoting, and unrealistically optimistic to the death)

Good as *Psytron* is my guess is that *Lords of Midnight* is the game people will still be talking about in ten years time Like *Psytron* it isn t really much like anything else but is a curious mixture of adventure and strategy

Set in the Land of Midnight you have to control the armies of the Free against the forces of the Foul — the vast area of the game is mapped out and presented on screen with a true 3D logic, ie, if you see a tower in the distance and head towards it next move it will be bigger and nearer You move initially four characters, each with different strengths and weaknesses, across the land trying to recruit larger armies to your cause, finding useful objects and battling it out with the dark forces which are controlled by the computer

> **"... more difficult to recruit armies ..."**

Different places have different properties — some are magical, others may provide limited rest and shelter I know people who have been playing it for weeks who are still only beginning to get to grips with its possibilities

It was written by a long-time Dungeons and Dragon/adventure fan Mike Singleton Among his other creations is *Starnet* a complex multi-user wargame currently running on the Micronet telesoftware network. "I knew Mike from C&VG days — I was keen for him to work for us Curiously enough he started with some arcade ideas but somehow, as we talked, a new idea emerged — it was going to be a game involving linked islands"

The first person to complete *Lords of Midnight* will have the entire story of their battle with the forces of darkness (every battle is different) turned into a fantasy book, a concept that can be guaranteed to make the average adventure fan start talking in elvish

Lords of Midnight is, however, only the beginning of a three part trilogy — the second section is well planned and is expected to follow later this year To be called *Doomdark's Revenge*, it will continue the story

"There are quite a lot of differences in *Doomdark's Revenge* For one thing it will be a lot more difficult to recruit armies to your side " The basic plot is that Morkin has been captured by Doomdark s daughter and the others must rescue him Chief among the goodies is the daughter of Lord of Dreams, Tanthel who is in love with Morkin (but is no wimp). The game is set in lands to the north of Midnight. "We re hoping to do a little more, technically, as well — Mike thinks he may be able to get a third background colour out of the Spectrum " The game will eventually be followed by the final section of the trilogy, *The Eye of the Moon*

Returning to *Lords of Midnight* I asked Terry if he could offer any general advice to these people trying to play it as an adventure "Morkin must pick up certain characters, one in particular, although I'm not saying which! Another bit of advice is that not all the Doomdark armies are the same Some are hunter armies who will always chase a particular character — you can use them as decoys to take the pressure off Morkin."

Both *Psytron* and *Lords of Midnight* are for the Spectrum, but Commodore 64 versions are planned "A 64 version of *Psytron* is definately under way and work on *Lords of Midnight* is starting soon " I asked Terry about support for other machines "We ll always look at new machines but the market is so difficult for them — look at how much material is already around for the Spectrum and 64 — I think that at least as far as the Christmas is concerned we'll only be supporting the two machines "

The interview essentially over Terry is forced as are all the subjects of Streetlife interviews to have his picture taken by *Popular's* own lensman David (Batley) Kelly Terry looks very gloomy about the prospect, particularly when he is made to stand in a corner of the office in an awkward position Smiling grimly, Terry's picture is taken "You journalists don't know how lucky you are," he says wistfully I think he'd choose to take on the hordes of Doomdark any day


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Music micro please

In the first of an occasional series on micros and music ***Graham Taylor*** *looks at the Casio MT-200 keyboard and Centronics interface*

Recent months have seen micros and musical instruments linking as never before

In the past music programs have enabled computers to be used as simple organs or synthesisers combined with music editors which enabled (usually) up to three notes to be stored or played at the same time and manipulated in various ways

To varying degrees such programs can be useful for learning about music and even simple composition, but there is one big problem so far as actually treating them as a sensible musical instrument is concerned — no keyboard!

One solution is the development, in recent months, of interfaces which enable you to connect your home computer, if it's a BBC, Spectrum, or Commodore 64 to a Midi keyboard. For these unfamiliar with Midi it is a standard like Centronics which enables different keyboards from different manufacturers to be connected together and used to control one another. It can mean, for example, that a digital drum machine can be played from the keyboard of a separate synthesiser. So far as home micros and Midi is concerned connecting the two enables the computer to be used as a memory store of note information and as a sequencer — repeating stored sequences of notes over and over for use as a rythmic basis for music. Donna Summer's *I Feel Love* is probably the classic example of the type

All this is pretty wonderful except for the fact that Midi keyboards start at several hundred pounds — much more than the computer. Not ideal for the dabbling beginner. The solution for the budget conscious computer fan who wants to play music but doesn't want to spend too much money comes from Casio — well known for its range of cheap home keyboards which straddle the bridge between simple organs and synthesisers

The MT-200 is an electronic keyboard which functions as an instrument independently from any computer link. It costs £129 and is worth evaluating purely on its own. You get a four octave keyboard with small but playable keys. There is a choice of eight preset voices labelled things like clarinet, organ oboe, vibraphone etc and six rhythms — such as like Disco, Rock Slow Rock, etc

A word here for those not familiar with portable keyboards. Not one of the sounds is in the slightest bit like what it's called, except Organ which sounds like some sort of organ. In fact to varying degrees and in different ways, all the sound are like organs. They are nevertheless rich and generally speaking, useable. The same is true of the rhythm unit, it sounds a bit well, artificial

On the other hand that doesn't mean I don't like it the sound can actually be appealing just because of its 'plastic' quality. As a keyboard pure and simple the MT-200 is pretty good for the money, no earth-shaker, but fun

However, on the side of the keyboard is a small plate behind which hides a connection onto which slots a funny white block called a PA-1. This device is a standard accessory to the MT 200 costing £29 50

The PA-1 is where the interest for micro owners starts — it is a standard Centronics interface to connect the MT 200 to any computer which has a centronics port built in or can be connected to one as a peripheral, eg, the Spectrum

Using the Centronics interface your computer can now control the keyboard with spectacular results. The keyboard is operated by standard Ascii characters which are simply printed down the Centronics line. This means that writing programs using the keyboard is simple. Notes are refered to by name and octave number and are switched on just by Lprinting the code. Up to eight notes can be switched on simultaneously as can rhythm and preset tones although at any given moment only one tone can be used

If you send certain even numbered note values listed in the manual, you will find that the notes will play in time with the rhythm unit — more technically they will be using the same clock (a sort of electrical timekeeper) for their timing. This means that using the device with simple Basic programs notes and chords can be played in perfect time with the rhythm. Better still if you are using less than eight notes under computer control you can still play the keyboard in the normal way playing as many notes simultaneously as are left from the eight allowed. You can have the computer playing four-note chord sequences whilst you play anything up to four-note chords directly on the keyboard

Alternatively, the computer can play a one-note base line and you can play up to seven notes simultaneously on the keyboard

This opens up tremendous musical possibilities which apart from the restriction in tone types, are usually only found on very expensive keyboards. Shove the whole noise through a reasonable amp and you will be pretty amazed at how impressive it can sound

At the moment there is only the information in the PA-1 interface manual to go on which is just about enough to write Basic programs. In the back of the manual is a fairly substantial Basic listing that provides a complete music editor for the interface — the only problem being that it is written in the Basic used on Casio computers which is vaguely BBC and vaguely Microsoft so it will need quite a bit of conversion, whatever your machine

However Casio have now realised the potential of the PA-1 interface and are busy as fast as they can commisioning software houses to write proper software using the interface. This augers well for those of us whose Basic isn't good enough to really get the most out of the interface

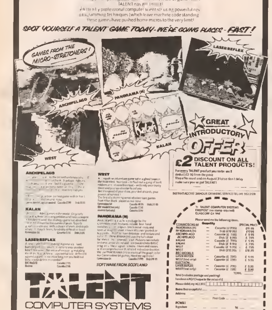
If the idea of playing music on your micro appeals then the Casio MT-200 + PA-1 interface is one of the cheapest and easiest ways to start

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Floating urns

Program *Danger Ranger* **Price** £9.95 **Micro** Commodore 64 **Supplier** Microdeal St Austell Cornwall PL25 4BR

Danger Ranger is a very simple arcade-style game from Microdeal

It consists of two games screens which you have to negotiate your way through controlling a little figure armed with a laser gun — isn't everybody in arcade games!

In the first screen ten keys have to be collected from several platforms while avoiding floating urns which shoot and radioactivate bats and roving eyes which don't

The second screen involves collecting treasure chests while avoiding drops of deadly acid which fall from the ceiling or rise from the floor (what happened to gravity?)

Straightforward to play and really not very exciting — after completing the two screens, you start right back at the first one again This time it is a bit more difficult, eg the urns shoot at you more often And so it continues up to the fifth and most difficult level

There is one nice touch — you can select a practice option, which enables you to play the game without losing any lives

Bearing in mind the high standard of so many of the games available now for the C64 I'm afraid I expect more than this Particularly since it is on disc

Richard Corfield

Fiendishly clever

Program *The Complete Machine Code Tutor* **Price** £14.95 **Micro** BBC B **Supplier** New Generation Software, The Brooklands, Sunnybank, Lyncombe Vale Bath BA2 4NA

First things first — this isn't a complete tutor It is a magnificent and fiendishly clever aid for revising and consolidating your knowledge of BBC Assembler

The pack includes two cassettes and a reference booklet On the tapes are 24 lessons about Assembly Language, these are very brief and probably inadequate for a complete novice But if you know a little about the subject they are a great way to brush up What makes this a super deal is the exercises which follow each lesson You are given a short Assembler program and a display showing the contents of various 6502 chip registers You can run this, modify it watch step by step what happens as it runs — and you can't crash the system!

Paul Bunn has written a colourful, clear interactive computer teaching package — the best I've come across in any field

Jan Watterson

Rolling logs

Program *Cuthbert In the Jungle* (disc) **Price** £0.00 **Micro** Commodore 64 **Supplier** Microdeal, St Austell, Cornwall, PL25 4BR

Arcade games with a jungle setting seem to be increasingly popular — one of the latest for the Commodore 64 is the disc version of *Cuthbert in the Jungle* from Microdeal

In this Cuthbert, who has appeared in some previous games from the same software house, has to find his way through the jungle in search of some treasures, for example a pot of gold and a golden chest

The jungle is however full of hazards — fires, snakes, tar pits, crocodiles and rolling logs These can be avoided by the usual means of either jumping or by grabbing a rope and swinging over them Alternatively, you can climb down into the underground passage which runs underneath the jungle, but this is not without is perils — it contains a deadly scorpion and is sometimes blocked by a brick wall

The various obstacles and treasures are spread over no fewer than 120 screens This would be very impressive except that all the screens use the same background with only the arrangement of the hazards, two or three per screen, being changed Despite that, the game is quite good fun and the number of screens means that it will take a long time to master fully Surely it could have had better graphics, though

Richard Corfield

Red for no-nos

Program *The Kingdom of Klein* **Price** £7.95 **Micro** BBC B **Supplier** Epic Software 10 Gladstone St Kibworth Beauchamp Leicester LE8 0HL.

This is one of a series of adventures from Epic — long machine code programs describing fantasy lands and a challenge in the form of a treasure or monster to be found It is a traditional adventure with the useful facility of saving a partially completed game (a feature sadly lacking in some adventures) The text is presented in colour — red for no-no's green for go The scenario is a search for the Magic Klein Bottle which has been stolen by a witch

There were a couple of small irritations — I spent a lot of time typing N E S W because the descriptions did not include exits from each location, and some of the commands had to be very precise before they were accepted, eg *UP* and *CLIMB* were rejected but *CLIMB LADDER* was accepted

Adventures are very like crossword puzzles in that the form is usually the same, but the interest for afficionados is in the extent and complexity of the problem presented Once solved the game becomes useless The sheer size of this one should provide even adventure freaks with several hours of fun

Jan Watterson

Stepping stones

Program *Jungle Trouble* **Price** £6.95 **Micro** Commodore 64 **Supplier** Durrell Software, Castle Lodge, Castle Green, Taunton, Somerset TA1 4AB

In *Jungle Trouble* from Durrell Software you find yourself once again stuck in the middle of a hostile jungle.

To get back to civilisation you must find your way through four stages of the jungle. Firstly, the river — you have to jump across the stepping stones, avoiding falling in and getting eaten by the crocodile. Secondly — the forest, where you must cut down the trees while dodging the falling coconuts and fending off the apes. Thirdly — in the cave you have to use a rope to swing over a burning pit and then dispose of a baby dragon. Finally — you have to leap over an ever widening chasm before you can eventually reach home.

The straightforward plot is matched by the graphics and sound which are both pretty uncomplicated. Despite the apparent simplicity of the game, it is actually surprisingly compulsive stuff while you try to master each of the stages. Once you have figured out how to complete each part though the incentive to have another go is reduced, so the game loses from the point of lasting interest.

Richard Corfield

The Spook

Program *Cybertron Mission* **Price** £6.95 **Micro** Commodore 64 **Supplier** Micro Power.

Cybertron Mission from Micropower is broadly speaking a futuristic maze game. Not a new type of arcade game by any means, but a very good example of the style.

Your mission is to collect the treasure on each of the four levels of Fort Cybertron and each level has 16 rooms arranged in a 4x4 grid. The rooms are patrolled by robots of various types, some more deadly than others. You can destroy all these with your laser rifle, but you will find the weapon is useless against The Spook, the ghost of the last person to enter the fort. This seems to appear if you spend too long in a room so the best thing to do is to gad about as fast as you can. If you collect all the treasure on any level you must take it to the safe before you can move on to the next stage.

This game is certainly up to the high standard now expected of games for the 64. It has well presented title, high score and instructions screens, and the quality of the graphics on the games screens is very good.

The game itself although not dramatically original or different from some others is quite challenging and has enough variety to make it a lasting favourite.

Richard Corfield

Cluster missiles

Program *Star Trooper* **Price** £5.95 **Micro** Commodore 64 **Supplier** Melbourne House, Church Yard, Tring, Herts, HP23 5LU

Fans of the good old fashioned alien shoot-out style of arcade games will enjoy *Star Trooper* from Melbourne House. In this one you control a long spaceperson (the Star Trooper) who is equipped with a jet back-pack and a laser blaster.

Using this equipment, the mission is to destroy the attacking waves of aliens (24 different types in all, with six levels of difficulty). Quite apart from all the aliens, cluster missiles and meteors must also be avoided, either of which will destroy you, losing one of your three lives. An occasional refuelling stop is also necessary to replenish the jet pack — this is accomplished by docking with the mothership.

This is all a pretty standard recipe but, still, it is a well written and presented game. Like other Melbourne House games for the 64, the title screen is accompanied by some cleverly programmed and catchy intro music. In the game itself the graphics are very good — the Star Trooper is seen against a smoothly scrolling background of stars, planets and galaxies. And the movement of objects around the screen is very smooth as one has come to expect on 64 games.

The action is fast and difficult enough to provide a real challenge. This is one of the best games of this type I have seen for the 64.

Richard Corfield

Run of the mill

Program *Chuckie Egg* **Price** £7.90 **Micro** Commodore 64 **Supplier** A & F Software, Unit 8, Canal Side Industrial Estate, Woodbine Street East, Rochdale, Rochdale, Lancashire OL16 5LB

Very few games for the 64 have actually made me laugh out loud, but *Chuckie Egg* from A & F Software managed it. In this game you have to guide a farmer round his hen houses collecting eggs and corn. When you have collected a dozen eggs, you can move on to the next hen house. Each hen house consists of various floors connected by ladders or moving platforms. However, the hens and ducks in the hen house are out to stop you collecting the eggs — and these aren't your run of the millet puny poultry — you lose a life each time they manage to get to you.

Although some elements of the game are not new it is certainly very good fun especially at the more difficult levels, where the sight and sound of the farmer whizzing around the hen house at high speed is really comical.

Despite enjoying the game, I must have a moan about the loading of the program. It may be that we were just unlucky and we had a slightly dud cassette for review but unfortunately the loader (one of the increasingly widespread high speed loaders for the 64) was unacceptably unreliable. It took on fewer then eight attempts to load the game the first time.

Richard Corfield

Opinion Poll

Program *1984* **Price** £6 50 **Micro** BBC B **Supplier** Incentive Software 54 London Street, Reading RG1 4SO

Calling all meglomaniacs! Fancy running the country single-handed? This package by R Carter and S Crocker offers you that very dubious pleasure Actually, you only run the economy but that affects everything else

1984 is a kingdom game where to survive you have to make a series of choices You choose bank rate, taxes, government spending and negotiate on wages If you go too far in any direction, it's curtains In this case the annual crunch point is just after the budget when you receive the results of a poll on your popularity

are clear graphs and good use

What makes this a very special game is that it offers quite a complex model of the British economy The details are given in the accompanying booklet *Pocket Guide to Running Britain* which should be bedside reading for every Cabinet member The presentation is excellent a series of clever wipes clears the screen with horizontal movements there of colour to separate items

It is a teaching game, I think — certainly I learned that being Chancellor is the last job I would ever want

Dave Watterson

Power Pills

Program *Pacman* **Price** £24 99 **Supplier** Atarisoft, Atari International, Atari House, Railway Terrace, Slough Berks

At last here is *Pacman* from Atari for the Vic20! It must be one of the most sought after pieces of Vic software and ranks along with such veritable arcade giants as *Donkey Kong* and *Centipede* also released from Atarisoft As any computer buff will tell you, any software from Atari is to be followed to the ends of the earth

This cartridge is grossly over-priced at £24 99 which is arguably not worth the luxury of instant data retrieval *Pacman* as you will probably know, is a game in which you play the title role by guiding a small 'pie chart" like figure round an endless labrynth while avoiding a mauraudung gang of ghosts

However, you can get the upper hand by eating a "powerpill" after which the tables will be turned and it will be the ghosts who run from you

As is the whole Atarisoft range, the software is well presented in a cardboard box which makes the package more attractive to the consumer, but this also ups the price Overall, the game has excellent graphics, fast and colourful, and the game also makes good use of the Vic's rather meagre sound capabilities

David Miller

Floating Point

Program *Pascal 4T* **Price** £25 00 **Micro** 48K Spectrum **Supplier** Hi-Soft, 13 Gooseacre Chaddington, Leighton Buzzard, Beds LU7 0SR

Pascal 4T from Hi-Soft for the 48K Spectrum consists of about 22K of machine-code

Though the accompanying manual does not set out to teach you Pascal, it shows you some of the things which may be done with it and how to use the powerful editor included in the program As well as the main program, there is a Pascal version of turtle graphics using the Spectrum's colour and high resolution screen

As Pascal is a compiled language there is a speed increase of well over twenty times over Basic. When you consider that this is using floating point numbers you will realise the power of the compiler

Hi Soft's *Pascal 4T* is a full implementation of Pascal — not a version of what is called Tiny Pascal Also, the object code it produces is true Z80 machine-code, not P-code which runs at a much slower rate There is no Basic computer which can match it for speed This package is great value for money for anyone interested in finding out more about Pascal

Roger Thomas

In The Bastille

Program *Les Flics* **Price** £6 95 **Micro** Spectrum **Supplier** PSS 452 Stoney Stanton Rd, Coventry

Les Flics takes a very successful cartoon/film idea and converts it into an original and highly entertaining game This is an arcade adventure in its truest sense — you need to have arcade reflexes, and the mind of an adventurer to do well It starts off with you in a maze of streets being followed by police cars, even at this early stage you can't afford to hang around for very many seconds unless you want to end up in the Bastille for the rest of your life!! Dotted around the maze are various doors which you can enter Once inside you become the Pink Panther (or, something exactly the same that miraculously, avoids copyright) and you have to move around the various floors of the building in search of numerous objects

At this stage, the graphics are particularly good, and the game still hard Each building is different and contains numerous things for you to collect or do The most important thing I have discovered so far is that daggers are useful to get out of trouble with the gendarmerie

The game lets you use either joystick (Kempston or cursor key) or the keyboard It is nicely packaged in a box, and has limited enough instructions to be frustrating — and addictive It is clearly one of the new breed of supergame which cost slightly more money, but can be expected to last a long, long time This deserves to be a top seller so I hope to see it in the charts soon

David Lester

Sounding off

***Dilwyn Jones** sounds off 'syntactically' using his QL Beep. Beep. .Beep*

The QL's *Beep* command can accept a variable number of parameters to produce a one-channel complex sound

As well as being so versatile, this means that, initially at least, complex sounds are just that Indeed the QL manual states unhelpfully that the "command is best used experimentally rather than syntactically"

Reading that made me think that some kind of sound development program was called for The program I have written enables you to have an on-screen display of the current parameter values and to play or cancel any sound using the values displayed Any value can be changed providing that it does not cause an overflow error

Briefly these are the eight values used with the SuperBasic *Beep* command in order

Duration controls the time for which the sound is played from a value of 0 playing the note continuously until cancelled to the shortest note with a value of 1

Pitch-1 sets the pitch A low value is a high pitch (short period) The use of just the two parameters *Duration* and *Pitch-1* gives the simplest type of one-note bleep, as on the ZX Spectrum.

Pitch-2 is the other limit of a note of varying pitch This may have a higher or lower value than *Pitch-1* If suitably set up, the sound can alternate between *Pitch-1* and *Pitch-2*.

Grad-X is the rate at which the sound changes by steps of *Grad-Y* Contrary to what is said in the manual, this accepts values in the range 0 to 32767

Grad-Y is the step value used while alternating between *Pitch-1* and *Pitch-2* This gives the change of pitch between every sound played it takes either a negative or positive value corresponding to ascending or descending notes

Wrap determines whether the sound goes up and down in pitch or just in one direction, and how many times A value of 15 means wrap forever

Fuzzy changes the pitch randomly every cycle A high value (eg 15) tends to make most sounds end up like white noise

Random changes the gradient randomly The effect depends on other parameters but is often quite noticeable!

To simulate notes without the full range of eight parameters any redundant values should be assigned a zero value When you run the program, it displays the eight *Beep* parameters, their current values and the limits which the values can take At the bottom of the screen is a display of all the controls available

At any time the parameter you are working on is displayed in reversed video (ie, red numbers on a white strip) You can move up and down the list with the up and down cursor keys at the bottom of the keyboard The white strip moves to show which parameter you're currently working on

The function key *f1* at the left of the keyboard is used to increase the value of the parameter Pressing *f1* alone increases the value by 1 Pressing *Ctrl f1* increases the value by 10 Pressing *Shift f1* increases the value by 100 Pressing *Ctrl shift f1* increases the value by 1000 Decreasing values is done with the *f2* function key in the same steps as for *f1* This is all displayed at the bottom of the screen as a constant reminder of the controls available.

To hear the sound, press either the *f3* function key or the *P* (play) key QL sound is quite loud, so you need a way of aborting any long sound Pressing *f4* or the *C* key will cancel the current sound If you want to quit the program simply press the *Q* key This does not cancel any sound already set so be sure to do this first or you may have to enter *Beep* alone as a direct command to make your QL shut up!

The issue of QL that I have been using has an annoying arithmetic habit of making −1 −1 and −2 −2 both equal to 0 but any other numbers are evaluated correctly (eg −3 −3 gives −6) If this happens on your QL as well, you may be unable to step down negative values from −1 to −2 with the program so you should step down by, for example, −10 then step back up again in steps of 1

The program uses many of the QL's facilities, with not a *Goto* in sight. Long variable names are used throughout, which means that there is a lot of typing to be done, but don't let this discourage you I find this program very easy to use and very useful for developing sounds for SuperBasic games

```
100 REMark Sound Development Program
110 :
120 REMark   (C) DILWYN JONES 1984
130 initialise
140 REPeat program_loop
150   key=CODE(INKEY$(-1))
160   IF key=99 OR key=67 OR key=244
THEN cancel_sound
170   LET previous=parameter
180   IF key=208 AND parameter>0 THEN
 LET parameter=parameter-1
190   IF key=216 AND parameter<7 THEN
 LET parameter=parameter+1
200   IF previous<>parameter THEN
210     AT 11,previous+6
220     PAPER 2
230     INK 7
240     PRINT value(previoes);FILL$(
 ,6-LEN(value(previous)))
250   END IF
260   IF key=232  THEN LET value(para
ameter)=value(parameter)+1
270   IF key=233 THEN LET value(param
eter)=value(parameter)+10
280   IF key=234 THEN LET value(param
eter)=value(parameter)+100
290   IF key=235 THEN LET value(param
eter)=value(parameter)+1000
300   IF value(parameter)>limit(highe
st,parameter) THEN LET value(paramete
r)=limit(highest,parameter)
310   IF key=236 THEN LET value(param
eter)=value(parameter)-1
320   IF key=237 THEN LET value(param
eter)=value(paraamter)-10
330   IF key=238 THEN LET value(param
eter)=value(parameter)-100
340   IF key=239 THEN LET value(param
eter)=value(parameter)-1000
350   IF value(parameter)<limit(lowes
t,parameter) THEN LET value(parameter
)=limit(lowest,parameter)
360   IF key=113 OR key=81 THEN EXIT
programe_loop
370   IF key=112 OR key=80 OR key=240
 THEN play_sound
380   IF key=99 OR key=67 OR key=244
THEN cancel_sound
390   AT 11,parameter+6
400   PAPER 7
410   INK 2
420   PRINT value(parameter);
430   INK 7
440   PAPER 2
450   PRINT FILL$(    ,6-LEN(value(par
ameter)))
460 END REPeat program_loop
470 STOP
480 DEFine PROCedure play_sound
490   BEEP value(0),value(1),value(2)
,value(3),value(4),value(5),value(6),
value(7)
500 END DEFine play_sound
510 DEFine PROCedure cancel_sound
```

```
520   IF BEEPING THEN BEEP
530 END DEFine cancel_sound
540 DEFine PROCedure initialise
550   INK 7
560   PAPER 2
570   MODE 4
580   CLS
590   CSIZE 1,0
600   PRINT BEEP duration,pitch_1,pit
ch_2,grad_x,grad_y,wrap,fuzzy, ' rand
om
610   CSIZE 2,0
620   AT 0,3
630   PRINT ------------------------
------------
640   PRINT Parameter  Value    Limit
s
650   PRINT ------------------------
------------
660   PRINT duration   0        -3276
8 to 32767
670   PRINT pitch_1    0        0 to
255
680   PRINT pitch_2    0        0 to
255
690   PRINT grad_x     0        0 to
32767
700   PRINT grad_y     0        -8 to
 7
710   PRINT wrap       0        0 to
15
720   PRINT fuzzy      0        0 to
15
730   PRINT random     0        3276
8 to 32767
740   PRINT ------------------------
------------
750   PRINT
760   CSIZE 1,0
770   PRINT     value    (      10
100          1000        up/down
780   PRINT increase  f1  CTRL f1  SH
IFT f1  CTRL-SHIFT f1  cursor
790   PRINT decrease  f2  CTRL f2  SH
IFT f2  CTRL-SHIFT f2   keys
800   PRINT f3/p play sound        f4/c
 cancel sound          q quit ;
810   LINE 0,20 TO 165,20
820   LINE 0,15 TO 139,15
830   LINE 0,5 TO 165,5
840   LINE 27,5 TO 27,20
850   LINE 39,5 TO 39,20
860   LINE 65,5 TO 65,20
870   LINE 95,5 TO 95,20
880   LINE 139,5 TO 139,20
890   LINE 54,0 TO 54,5
900   LINE 123,0 TO 123,5
910   CSIZE 2,0
920   DIM limit(1 7),value(7)
930   LET lowest=0:LET highest=1
940   LET duration=0:LET random=7
950   RESTORE
960   FOR parameter=duration TO rando
m
970     READ limit(lowest,parameter
limit(highest,parameter)
980   END FOR parameter
990   DATA -32768 32767,0.255,0.255 0
,32767,-8,7,0.15,0,15,-32768,32767
1000   parameter=duration
1010   LET previous=parameter
1020   PAPER 7
1030   INK 2
1040   AT 11,parameter+6
1050   PRINT 0
1060   INK 7
1070   PAPER 2
1080 END DEFine initialise
```




Screen savers

Bob Pritchard shows you how to save and load selected sections of the Spectrum screen display

The two facilities provided in the Spectrum for saving television pictures are extremely useful and without doubt invaluable out they can at times be uneconomical Using the *Save* 'picture' *Screens* method, for example, naturally assumes that the whole screen is required to be saved and thus will output to tape 6912 bytes. This comprises 6144 display bytes and 768 attribute bytes. The other method, *Save* "name" *Code* 16384, 6912 does the same thing but slows the user to verify what has been saved. Nonetheless, the same amount of bytes goes to tape, that is 6K of display and ¾K of attributes.

Now this is quite a bit of tape length and once the process has started, unless *Break* is used, waiting time enters into it. But if you are a keen graphics programmer and have used only a part of the screen that needs to be saved, or the middle section is all that is required, then a lot of saving is being done of bytes not needed, some of them zero. Also, attribute bytes are included when they may not be wanted or they may want to be changed.

Loading black has its drawbacks too. Whatever has been *Saved* will be *Loaded* back to the screen exactly as it was *Saved* and this again takes time. A perfectly good graphic display occupying two thirds of the screen may require text or a description being added later in the lower third, or indeed instructions for a game.

The following tables give the relevant details of each section of the Spectrum screen as divided in the Spectrum system.

DISPLAY

Section	Lines	Start	Finish	Bytes
Top	0 to 7	16384	18431	2048
Mid	8 to 15	18432	20479	2048
Top + Mid	0 to 15	16384	20479	4096

ATTRIBUTES

Section	Lines	Start	Finish	Bytes
Top	0 to 7	22528	22783	256
Mid	8 to 15	22784	23039	256
Top + Mid	0 to 15	22528	23039	512

It is now possible to construct a Basic program, using these figures, which will *Save* the top, the middle, or the top and middle sections as required, and the whole thing can be made a *Gosub* routine in any graphics program you may have written.

The Basic program given here uses an input 1 for top, 2 for middle and 3 for top and middle combined. It provides for *Saving* just the display bytes as desired relative to the screen sections, and whatever has been *Saved* in this manner can also be verified.

When *Loading* back from tape, it is possible to transpose sections of screen such that what was *Saved* from the middle can be loaded back to the top and vice versa by entering the change of *Code*. For example, if on tape there is 'picture' *Code* 16384, 2048 it can be loaded back as "picture" 18432,2048 and what started life as a top screen picture will then appear as a middle screen picture.

When *Loading* back displays from tape in this way, enter first some command such as *Print at* 15,0, thus setting a new print position so that "report" messages do not encroach on the picture just loaded in, marring it. The report "Bytes" should now appear below the middle section of the display.

One last point: since the tape is already running after saving the attributes, it only remains to press a key when the second prompt appears to *Save* the display bytes if that is what is required. But remember that the display and the attributes will have the same name *Saved* on tape; only the codes will be different.

```
   1 REM Saving Screen Sections
   2 REM ***Bob Prichard***
   3 REM **©February1984***
   4 REM GOSUB Routine
   5 REM ........................
4999 STOP
5000 LET d=16384  LET a=22528  L
ET db=2048  LET da=256
5005 DIM o$(32)  PRINT AT 20,0,o
$,AT 21,0,o$
5010 INPUT "Screen Section[1,2 o
r 3]?",s
5020 IF s<1 OR s>3 THEN GO TO 50
10
6630 IF s=1 THEN GO TO 5050
5040 IF s=2 TNEN LET d=d+db  LET
 a=a+da  GO TO 5050
6060 LET db=2*db  LET da=2*da
5060 INPUT "Name for Save?",n$
IF LEN n$>10 THEN GO TO 5060
5065 INPUT "Saving Rttrabutes? y
/n";a$  IF a$<>"Y" AND a$<>"y" T
NEN GO TO 5080
5070 SAVE n$CODE a,da  REM this
saves Attributes
5080 SAVE n$CODE d,db  REM this
saves Display
5065 IF a$<>"Y" AND a$<>"y" THEN
 GO TO 5100
5090 PRINT AT 20,0,"Saved ",n$,"
CODE ",a,",",da
5100 PRINT AT 21,0,"Saved ",n$,"
CODE ",d,",",db
5200 AETUAN
```

Jump to it!

***Peter Whittaker** shows you how to make use of the Dragon Rom's RTS instruction in your own programs*

Location 359 contains an RTS instruction (return from subroutine) which is called whenever the Rom's character input routine is used. By replacing this RTS instruction with a JMP command (jump to specified address) we can redirect the computer to our own routines. I have written three utility programs using this approach. If assembler 1 is entered, anything sent to the screen will also be copied to the Printer. Assembler 2 will also duplicate data sent to the Printer, copying it to the screen. These routines are disabled by `Poke359, 57` and enabled by *Poke359,126*. This is a rather clumsy way of switching a routine in and out. It is much neater if one can just press a key to switch a routine on or off. In all the programs below, the *Shift* and *Right Arrow* keys are used to do this. To avoid confusion, all the programs report after the key press saying whether they are on or off.

Assembler 3 (or Basic #1) is the improved screen to printer copy routine.

Next week we shall use the same system to create an *List* formatting routine and a List speed control.

ASSEMBLER 1. SCREEN TO PRINTER.

```
7D01                30     ORT
7D01 3417           20 @START  PSHS  A,D,CC
7D03 B6006F         20     LDA  111
7D06 8100           20     CMPA  #0
7D08 2703           20     BEQ  @CONT
7D0A 3517           20 @RETURN  PULS  X D,CC
7D0C 39             20     RTS
7D0D 3517           30 @CONT  PULS  X,D,CC
7D0F BD800F         30     JSR  $800F
7D12 39             30     RTS
0167                30     ORG  359
0167 7E7D01         30     JMP  @START
016A                30     END  @START
```

ASSEMBLER 2 BOTHWAY COPY.

```
7D01                30     ORT
7D01 3417           20 @START  PSHS   D CC
7D03 B6006F         20     LDA  111
7D06 8100           20     CMPA  #0
7D08 2707           20     BEQ  @PRINTER
7D0A 81FE           20     CMPA  #-2
7D0C 2709           20     BEQ  @SCREEN
7D0E 3517           20 @RETURN  PULS  X D CC
7D10 39             20     RTS
7D11 3517           30 @PRINTER  PULS  X D CC
7D13 BD800F         30     JSR  $800F
7D16 39             30     RTS
7D17 3517           30 @SCREEN  PULS  X,D CC
7D19 BD800C         30     JSR  @800C
7D1C 39             30     RTS
0167                30     ORG  359
0167 7E7D01         30     JMP  @START
016A                30     END  @START
```

ASSEMBLER 3. KEY ON/OFF COPY.

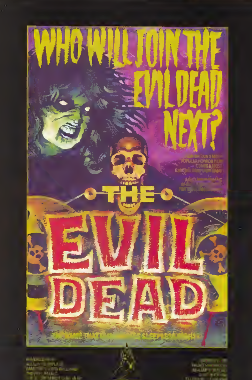
```
7D01                70     PRT
7D01 3417           20 @START  PSHS  X D CC
7D03 B6006F         20     LDA  111
7D06 8100           20     CMPA  #0
7D08 2703           20     BEQ  @CONT
7D0A 3517           20 @RETURN  PULS  X D CC
7D0C 39             20     RTS
7D0D 3517           30 @CONT  PULS  X D CC
7D0F 3417           30     PSHS  X D CC
7D11 815D           30     CMPA  #93
7D13 2718           30     BEQ  @TOGGLE
7D15 B67D57         30     LDA  @TOGG
7D18 8100           30     CMPA  #0
7D1A 27EE           30     BEQ  @RETURN
7D1C 3517           30     PULS  X D CC
7D1E BD800F         30     JSR  $800F
7D21 3417           30     PSHS  X,D CC
7D23 20E5           30     BRA  @RETURN
7D25 B67D57         40 @TOGGLE  LDA  @TOGG
7D28 8100           40     CMPA  #0
7D2A 270C           40     BEQ  @SET
7D2C 7F7D57         40     CLR  @TOGG
7D2F 8E7D4D         40     LDX  #@TCLR
7D32 BD90E5         40     JSR  37093
7D35 7E8371         40     JMP  33649
7D38 7C7D57         40 @SET  INC  @TOGG
7D3B 8E7D44         40     LDX  #@TSET
7D3E BD90E5         40     JSR  37093
7D41 7E8371         40     JMP  33649
7D44 20434F5059204F4E  50 @TSET  FCC  " COPY ON "
7D4D 20434F505920F46   50 @TCLR  FCC  " COPY OFF "
7D57 00             50 @TOGG  FCB  0
0167                60     ORG  359
0167 7E7D01         60     JMP  @START
016A                70     END  @START
```

BASIC #1. KEY ON/OFF COPY.

```
10 CLEAR 200,32000
20 FOR A=32001 TO 32087
30 READ B POKE A,B
40 NEXT A
50 POKE 361,1 POKE 360,125:POKE 359,126
60 STOP
100 DATA 52 , 23 , 182 , 0 , 111 , 129 , 0  39  3 , 53 , 23 , 57 , 53  23 , 5
2  23  129  93 , 39 , 16 , 182 , 125 , 87  129 , 0 , 39 , 238  53 , 23 , 10
9 , 120 , 15 , 52 , 23 , 32 , 229 , 182 , 125 , 87 , 129 , 0 , 39 , 12 , 125
110 DATA 125 , 87 , 142 , 125  77 , 189 , 144 , 229  126  131 , 113 , 124 , 1
25 , 87 , 142 , 125 , 68  189 , 144 , 229 , 126 , 131 , 113 , 32 , 67 , 79  80
 , 89 , 32 , 79 , 78 , 0 , 32 , 67 , 79 , 80 , 89 , 32 , 79 , 70 , 70 , 0 , 0
```



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Sorted and filed

***Neil Barnes** continues his multi-purpose facility program for BBC with 1.2 operating system*

This is the second part of last week's program — a file program designed to make use of Mode 7 BBC graphics

Procedures	Function
PROCmenu	Displays menu on screen
PROCtitle (TS, H)	Prints title in double height TS — text to be printed H — X position of text
PROCdecide	Decides which option has been chosen
PROCnewfile	Allows a new file to be created
PROCgetdata	Inputs data from user
PROCadd	Allows extra items to be added
PROCverify	Allows the file to be verified
PROCdump	Dumps file to printer
PROCsort	Sorts the file
PROCsearch	Searches for an item in file
PROClist	Allows the user to view the file
PROCend	Ends the program

```
1220 FOR loop1=N TO A1
1230 VDU31,0,13,134:PRINT"Item number ";" ";N; :"
1240 INPUTTAB(16,13)IT$
1250 PRINTTAB(15,13)STRING$(25," ");
1260 IF LEN(IT$)>15 SOUND1,-15,100,1:PRINTTAB(15,13)STRING$(25," "):GOTO1240
1270 IF IT$<>"***" file$(loop1)=IT$:N=N+1:SOUND1,-15,180,1
1280 IF IT$="***" THEN 1070
1290 IF A1=N THEN 1300
1300 NEXT
1310 IF N>A1 VDU31,0,5,134:PRINT"You have used all the room that you":VDU134:PR
INT"allocated."
1320 DEFPROCverify
1330 PROCtitle("VERIFYING THE FILE",9)
1340 PRINT
1350 VDU131:PRINT"Every item that you have inputted will"
1360 VDU131:PRINT"be shown. If you wish  to change it"
1370 VDU131:PRINT"just type in the correct version
1380 PRINT
1390 PRINT
1400 VDU135:PRINT"A file must have already been created,"
1410 VDU135:PRINT"if not the menu will be shown."
1420 VDU31,5,24,129:PRINT"Press SPACE BAR to continue"
1430 REPEAT UNTIL GET=32
1440 PROCtitle("VERIFYING THE DATA",9)
1450 REM Is data correct?
1460 PRINTTAB(25,5)STRING$(15, " "):PRINTTAB(10,5)"Item number";" ";X;  ":VDU13
0:PRINT;file$(X)
1470 PRINT :VDU133:PRINT"Correct? (Y/N)
1480 A$=GET$
1490 IF A$="Y" OR A$="y" THEN SOUND1,-15,200,2:GOTO1540
1500 IF A$="N" OR A$="n" SOUND1,-15,60,1:VDU31,1,11:PRINTSTRING$(40, " "):VDU31,
0,11,134:PRINT"Input correct value ";:INPUTTAB(1,13)Q$
1510 IF LEN(Q$)>15 THEN VDU31,1,12:PRINTSTRING$(40," "):SOUND1,-15,100,1:GOTO15
00
1520 file$(X)=Q$:VDU31,0,11:PRINTSTRING$(40, " "):VDU31,0,13:PRINTSTRING$(40," "
):SOUND1,-15,100,2
1530 GOTO1460
1540 NEXT
1550 PROCmenu
1560 ENDPROC
1570 DEFPROCdump
1580 REM Dump file to printer
1590 PROCtitle("DUMPING FILE TO PRINTER",5)
1600 VDU31,1,6:PRINT"This facility can only be used after a"
1610 PRINT" file has been created using OPTION 1"
1620 PRINT" otherwise the menu will be shown."
1630 PRINT
1640 VDU131:PRINT"It is designed to be used in"
1650 VDU131:PRINT"conjunction with a PARALLEL printer."
1660 PRINT
1670 VDU133:PRINT"Make sure the printer has power and"
1680 VDU133:PRINT"that it is ON LINE."
1690 PRINT
1700 VDU134:PRINT"An alphabetical or numerical dump can"
1710 VDU134:PRINT"be attained by first using OPTION 5."
1720 VDU31,4,22,129:PRINT"Press SPACE BAR for printout"
1730 REPEAT UNTIL GET=32
1740 CLS
1750 PROCtitle("PRINTING ITEMS IN FILE",5)
1760 PRINT'
1770 FOR W=1 TO A1
1780 REM Enable printer
1790 VDU2
1800 PRINTfile$(W)
1810 NEXT
1820 REM Disable printer
1830 VDU3
1840 VDU31,4,22,134:PRINT"Press SPACE BAR to continue"
1850 REPEAT UNTIL GET=32
```

Continued over the page

```
1860 PROCmenu
1870 ENDPROC
1880 DEFPROCsort
1890 REM Sort file into order
1900 PROCtitle("SORTING THE FILE",8)
1910 VDU31,0,5:PRINT"This option will sort the file into"
1920 PRINT"alphabetical order."
1930 PRINT"Numbers are given precedence over"
1940 PRINT"letters."
1950 VDU31,0,11:PRINT"Do you want the complete file to be":PRINTTAB(0,9)STRING$(32," "):SOUND2,-15,200,1
1960 INPUTTAB(0,12)"sorted ?"Z$
1970 IF Z$<>"Y" AND Z$<>"y" AND Z$<>"N"AND Z$<>"n" THEN 1950
1980 IF Z$="Y" OR Z$="y" THEN S%=0:E%=A%:GOTO2050
1990 IF Z$="N" OR Z$="n" THEN VDU31,0,15,131:PRINT"Which item number do you want to start"
2000 VDU131:INPUT"from ? "S%
2010 IF S%<1 OR S%>N PRINTTAB(7,16)STRING$(33," "):SOUND1,-15,100,1:GOTO1990
2020 VDU31,0,19,134:PRINT"Which item number do you want to end"
2030 VDU134:INPUT"at   ?"E%
2040 IF E%>N OR E%<=S% PRINTTAB(5,20)STRING$(35," "):SOUND1,-15,100,1:GOTO2020
2050 VDU31,2,22,134:PRINT"Press SPACE BAR to sort file"
2060 REPEAT UNTIL GET=32
2070 PROCtitle("SORTING THE FILE",8)
2080 VDU31,7,10:PRINT"*** Sorting the file ***"
2090 REPEAT
2100 flag=0
2110 FOR C%=S% TO E%-1
2120 IF file$(C%)<=file$(C%+1) THEN 2170
2130 P$=file$(C%)
2140 file$(C%)=file$(C%+1)
2150 file$(C%+1)=P$
2160 flag=1
2170 NEXT
2180 UNTIL flag=0
2190 VDU31,7,10,134:PRINT"*** File now sorted ***"
2200 VDU31,6,20,133:PRINT"Press SPACE BAR for menu":REPEAT UNTIL GET=32:PROCmenu
2210 ENDPROC
```

To be continued next week

Full of character

***Simon Wallace** takes a closer look at the word processor*

In the last issue, we looked at this word processor in fairly general terms. This week, we shall look more closely at its implementation.

The program has been coded in Basic as described last week. However one machine code routine has been included to give a fast, accurate guide to the location of the cursor. As this was found to be necessary, the routine has also been used to turn the border red if the cursor is near the end of a logical line or at the bottom of the screen. There is no other protection against losing data off the screen. (This is another area in which you may wish to improve the program.) The program as written leaves enough space to store over 20 000 characters of text. Any longer document would need to be split.

Most input values are set up with defaults. For example, pressing the *Return* key in response to line number and lines to display in the editor will select the end of file, displaying no data. This is the normal way to add to the text. Options for either all or part of the file will default to the whole file. All input values are validated where possible, and, in some cases, sensible but arbitrary values are used.

Definitions for the variables used in the program can be found in the Data Dictionary. There is also a table of the special characters used in Commodore Basic for screen and colour control. When typing the program, use the upper/lower case mode of the keyboard by first pressing Shift and the C= Commodore key. When the program runs it locks the keyboard in this mode.

Using the word processor

Most possible actions are explained on the screen. During an edit the whole screen is used for your data, so editor instructions must be understood in advance. If anything goes wrong see item 15 below.

1 Load the program and enter *Run*.
2 If you are changing previously entered text, select option *L* to load. Enter the filename. To select the whole file press *Return* when asked for the start record number. When the file is found on the tape, the screen will turn green.
3 Select *E* for edit. Enter the line number to start at and the number of lines to show on the screen. Normally you should edit about ten lines at a time. If you only wish to add text to the end of the file, press *Return* both times instead of entering the numbers.
4 During the edit, depressing the *FE* key will enter the reformat routine. Enter the required width of the text. An additional indentation may be given if desired.
5 The *F5* key will create an additional line at the current cursor position.
6 Depressing *Shift* and *F5* (*F6*) will delete the line at the current cursor position.
7 The *Return* key will end the current logical line at the cursor.
8 The *F7* key will set the cursor to the start of the next logical line without affecting the current line.
9 A blank line should be created by typing the special character ← on its own on a line. A new page can be started by using ↑ on its own.
10 The background will turn red if the cursor is near the end of a logical line or at the bottom of the screen. Do not allow data to be lost by typing too much.
11 End the edit by depressing the *F1* key. Press *U* to update the data with your changes. Pressing *A* causes the changes to be aborted.
12 After an edit you should either enter the numbers for the next edit, or e to exit from the editor.
13 To save the data, select option *S*. Enter the filename and press *Return* to select the whole data. It is wise not to overwrite the previous version, so keep two different tapes. After the save rewind the tape and select the verify option if desired.
14 To print the data select option *P*. Enter start and end line numbers (or press *Return* for the whole file). Enter the length of printed text per page. Enter the number of lines between pages or −1 to manually adjust the paper. Enter the device number as shown. Use *3* to preview the text on the screen. *4* or *5* are the standard printer channels. Enter the width of margin required. Enter *Y* or *N* to select line numbering. When the computer pauses for pages or at the end of the print, depress a key to continue.
15 If you break *Basic* in some way, enter *Goto 999*. This will prevent your data being lost.
16 At the end of your work, select option *F* to return to Basic. Make sure you have saved or printed first as the data is lost.

Word processor — data dictionary

a	menu option selected
bl$	blank line (40 spaces)
cd$	25 cursor down$
dev	device number to *Print* on
el	edit line — start line no
en	edit number — no of lines to display
eof	end of file
fi$	filename for *Load* or *Save*
lc	line count (whilst printing)
lr	lines returned on screen
mg$	margin
out$	general purpose output line
pe	print end line no
pg	page gap — blank lines between pages
pl	page length
ps	print start line no
qu$	quote character
q2$	quote + comma
rl	required line — cursor position
sc$	array of text read from screen
st	status of tape transfer — see manual
tx$	array ndiding main text
x$	character input from keyboard
xa	ascii value of typed character
x	line no of cursor
y	character position of cursor
yn	yaw no — change in file length due to edit

(Other variables have temporary use only)

Special characters

The following special characters [illegible] in *Print* statements

```
CRSR down
CRSR right
clear screen
cursor HOME
colour BLK
colour YEL
colour WHT
```

```
4300 rem.."SCREEN CONTROL"
4310 sys 49152   x=peek(253)   y=peek(254)   if a>39
then a=y-40
4340 z=x*40+y+1024   c=peek(z)   c=c or 128   poke z,c
4360 get x$   if a$="" then 4360
4365 c=c and 127   pokez,c   print x$,   xa=asc(a$)
4367 if xa=13 then pokez 34   pokez+1,44   gosub 710
4368 if xa>133 then 4310
4369 if xa=136 then print ""   gosub 710   rem "F7"
4370 if xa=135 or xa=139 then gosub 4500   rem "F5" or F6'
4380 if xa=133 then return   rem "F1"
4385 if xa=134 then gosub 4700   rem "F3
4390 goto4310
4500 rem. "INSERT/DELETE LINE"
4510 ri=x : gosub 600   gosub 800
4520 if ln=0 then 4550
4530 for k=1 to ln
4540 print qu$,sc$(k) 428   next k
4550 sys 49152   x=peek(253)
4553 if xa=135 then ln=ln-1   print qu$,bl$,428
4555 if ln<ln+2 then 4580
4560 for k=ln+2 to lr
4570 print qu$,sc$(k),428   next k
4580 sys 49152   print "  ;left$(cu$,x)
4590 return
4700 rem. "REFORMAT"
4710 rl=0   gosub 600   w=70   m=0   print "
REFORMAT TEXT"
4720 print "  Total width required (20-76)"
4725 input "                 (0 to abandon)";w
4727 if w=0 then 4870
4730 if w<20 or w>76 then 4720
4740 input "  Width of extra indentation (0-40)" m
4750 if m<0 or m>40 or w<m+20 then print "ERROR"   goto 4700
4760 rem remove leading spaces
4770 for i=1 to 25
4780 for j=1 to 80
4790 if mid$(sc$(i),j,1)<>" " then 4800
4795 next j
4800 l=len(sc$(i))   sc$(i)=right$(sc$(i),l-j+1)
4805 next:
4810 m0$=left$(bl$ m)   i=1   gosub 800
4815 out$=m0$   k=w-m   sp$=""   sp=0
4820 l=len(sc$(i))
4821 if sc$(i)<>"↑" and sc$(i)<>"←" then 4826
4822 if k<w-m then print qu$,out$ 42$
4823 print qu$,sc$(i),42$   i=i+1   goto4815
4826 if l<1 then i=i+1   goto 4830
4827 if l>k-sp then 4840
4828 out$=out$+sp$+sc$(i)   k=k-l-sp   i=i+1   sp$=" "   sp=1
4830 if i>25 then print qu$ out$ 42$,"  ",   return
4835 goto 4820
4840 s=0   for j=1 to k+1-sp   if mid$(sc$(i),j,1)=" " then s=j
4845 next j
4850 if s>0 then out$=out$+sp$+left$(sc$(i),s-1)   sc$(i)
=right$(sc$(i),l-s)
4853 if s=0 and k=w-m then poke53280,10   sc$(i)=
left$(sc$(i),w-m)
4855 print qu$,out$,420   goto 4815
4870 rem..reinstate screen
4875 gosub 800
4880 for j=1 to lr   print qu$ sc$(j) 42$   next j
4890 print "   return
4900 rem ."UPDATE"
4910 ri=0   gosub 600
4972 print " Lines displayed = ",en
4973 print " Lines returned =   lr   yn=lr-en
4979 print " Update or Abort? (U or A)"
4980 gosub 520
4981 if x$="u" then 4984
4982 if x$="a" then return
4983 goto 4980
4984 if lr>en then 4988
4985 if lr<en then 4990
4986 goto 4994
4988 for j=eof to el step-1   tx$(j+yn)=tx$(j)   next j
  goto 4994
4990 for j=el to eof   tx$(j)=tx$(j-yn)   next j
4994 eof=eof + yn   print " End of file now at" eof
4995 if lr>0 then for j=1 to lr   tx$(j+el-1)=sc$(j)
next j
4997 for j=1 to 5000   next j
4999 return
5000 rem.."PRINT ROUTINE"
5005 poke 53280 2   poke53281,10
5010 print "  Printing Options "
5015 ps=1   pe=eof   pl=10   pg=-1
5020 input "  Enter start line no",ps
5030 input "  Enter end line no",pe
5040 input "  Enter page length";pl
5045 if pl<1 then 5040
5050 input "  Enter page gap ( or -1 to pause )",pg
5060 if ps<1 then ps=1
5070 if pe>eof then pe=eof
5080 if ps>pe then return
5100 print "  Enter device to print on"
5102 print "    3 = TV Screen"
5104 print "    4 = Normal Printer Channel"
5106 print "    5 = 2nd Printer or Printer/Plotter",
5110 dev=3   input dev   if dev<3 then 5100
5120 if dev>5 then 5100
5150 m=0   input "  Enter margin width",m
5160 m9$=left$(bl$,m)
5170 print   Show text line numbers? (y or n)",
5175 l$="n"   input l$
5199 print   ",
5200 open 2 dev 7
5210 lc=0
5220 for i=ps to pe
5250 if lc=pl then gosub 590
5260 if tx$(i)<> "↑" then 5280
5264 if lc=0 then 5290
5268 if pl>900 then print "Page throw invalid - page
too long   goto 5280
5270 print#2   lc=lc+1   goto 5250
5280 if tx$(i)="←" then print#2   goto 5280
5284 if l$="y" then m9$=right$(bl$+str$(i),4)+left$(bl$,m+1
5286 print#2, m9$,tx$(i)
5288 lc=lc+1
5290 next i
5300 close 2
5900 gosub 510
5999 return
6000 rem.."SAVE ROUTINE"
6010 poke 53280 6   poke 53281,14
6020 print              SAVE DATA FILE ON TAPE"
6030 gosub 3025
6031 rem..get filename etc
6035 if k>eof then k=eof
6040 if fi$="  or k<j then return
6100 open 3,1,1,fi$   poke 53280,5
6110 for i=j to k   print#3,qu$,tx$(i),qu$   next i
6200 close 3   poke 53280 6
6300 print "  Do you wish to verify (Y or N)?"
6310 gosub 520
6320 if x$="n" then return
6330 if x$<>"y" then 5300
6400 print     Rewind tape"   gosub 510
6410 open 3 1 0 fi$   poke 53280,5
6420 for i=j to k   input#3,out$
6430 if st=0 and out$=tx$(i) then next i
6440 if i=k and st=64 then print"  OK" goto 6500
6450 print "  VERIFY ERROR!"
6460 print "  Error status reply = ",st
6470 print "  Record number = ",i
6480 print "  (Last record should be ",k,")"
6500 close 3   poke 53280 6
6900 gosub 510
6999 return
7000 rem.."FINISH ROUTINE"
7010 print " Do you really want to return to BASIC?"
7020 gosub 520
7030 if x$="n" then return
7040 if not x$="y" then 7020
7100 poke 53280,3   poke 53281,6
7110 print chr$(142)chr$(147)chr$(9)chr$(159)
7200 end
9999 rem.."END OF PROGRAM"
```

Open Forum

Open Forum is for you to publish your programs and ideas. Take care that the listings you send in are all bug-free. Your documentation should start with a general description of the program and what it does and then give some detail of how the program is constructed.

Moonlander

on Vic20

This is a version of the old arcade favourite for the unexpanded Vic. It is in two parts, first *Load* and *Run* the first program as this gives the instructions and sets up the udgs. When the first program has been *Run*, proceed and *Load* the second program (the game). When the program has been loaded you can run it and play the game.

```
1 REM******************
2 REM* MOONLANDER *
3 REM******************
4 REM* D.J.PATERSON *
5 REM******************
6 REM* CORBY (1984) *
7 REM******************
8 REM
9 POKE52,28 POKE56,28 POKE650,255 GOTO2[illegible]
10 FORL=7200TO7679 POKEL,PEE[illegible]
20 FORL=716[illegible]279 READ[illegible] POKEL,Q NEXT[illegible]
25 PRINT"[illegible]PLEASE PRES[illegible]TURN"
26 PRINT"[illegible]LOADTT" END
30 DATA24,126,25[illegible] 126,36,65,231
40 DATA60,9[illegible] 90 66,36 24,0 0
50 DATA255,255 255 255,255,255,255,255
60 DATA54,202,129,65,34,66 70 56
70 DATA6,57,[illegible]
[illegible]
[illegible] DATA0 0,15 63 [illegible] 255,255 [illegible]
[illegible] DATA[illegible],60,126 [illegible] 25[illegible],66,0
1[illegible] DATA144 2 72,0,145,0 8[illegible]
110 DATA16 [illegible] 24,254 [illegible] 254 60,[illegible]
120 DATA[illegible] 3 [illegible] 12[illegible],63 16 28
130 DATA[illegible],26,192,230,114,222,252,8,56
140 DATA0 0,0,0 16,8 [illegible]6 8
150 DATA16 6 16 8 1[illegible]
200 POKE[illegible]
[illegible]
220 PRINT"    [illegible]LANDER    ",
2[illegible] PRINT"
240 PRINT"    D.J.PATERSON    ",
250 PRINT"
260 PRINT"[illegible]YOU MUST LAND YOUR    SPACESHUTTLE ON
[illegible]
270 PR[illegible]
[illegible] YOU CAN LAND [illegible]
280 PR[illegible]IGATE YOUR SHI[illegible]
[illegible]
[illegible] LANDED YOU MUST THEN GET
BACKTO THE MOTHERSHIP,"
300 PRINT"SHOOTING ALIENS FOR   EXTRA [illegible]
310 PRINT[illegible]
320 [illegible]
33[illegible]
[illegible]           MOONLANDER
332 PRIN[illegible]
333 PRINT"     D.J.PATERSON
334 PRINT
340 PRINT"[illegible]TROLS
350 PRINT"[illegible]
360 [illegible]
3[illegible]              [illegible] & FIRE"
3[illegible] [illegible]TO10
400 [illegible]
41[illegible] 290 FOR[illegible]
420 [illegible] THENPOKE36[illegible]
430 GOTO210
490 QW=PEE[illegible]
49[illegible] THENJ$="[illegible]OU CRASHED
INTO AN ALIEN[illegible]
492 IFQW=30[illegible]THENJ$=[illegible]
493 IFQW=[illegible]
494 [illegible] THE SHIP [illegible]
[illegible]
495 IFJ$=[illegible]
[illegible]
[illegible]-128TO[illegible]
5[illegible] POKES[illegible] POKES L+2[illegible]
520 POKEX[illegible]
530 NEXTL
535 POKES[illegible]
[illegible]
[illegible]
[illegible]
[illegible]PEEK[illegible]
590 IF[illegible]
6[illegible] [illegible]PEEK(M-22)[illegible]
635 IF[illegible]THENM=0 RETURN
640 POKEM 1[illegible] POKEM-[illegible]
650 RETURN
[illegible]
[illegible]
[illegible]
663 FORT= TO102 [illegible]
[illegible]
[illegible]
[illegible]IFPEEK(M)[illegible]32THENPOKEM 0 POKEM+2[illegible]
6[illegible] M=M-22 POKEM 8 POKEM+2[illegible] 0
672 FOR[illegible]
[illegible]
[illegible] 32 POKEM+2
[illegible]M=0 RETURN
800 FOR[illegible]
[illegible] 20[illegible]
8[illegible] [illegible]+22 32 [illegible] 0
830 [illegible]TO7
835 FORT=[illegible]TO 8 NEXT
840 POKE[illegible] NEXT NEXT
850 POKE[illegible] 0
860 PR[illegible]
8[illegible]
880 PRINT[illegible] (Y/N)
885 POKE198 0
890 GETZ$ [illegible]
8[illegible] [illegible]THEN890
9[illegible] END
1000 A$[illegible]
1010 A$(2)=[illegible]
1020 A$(3)=[illegible]
1030 [illegible]
1040 [illegible]
1050 [illegible]
1060 A$(7)=[illegible]
1070 FORL=7720TO[illegible]STEP22 POKEL 32 POKE[illegible] 32 NEXT
1080 RETURN
```

Open Forum

```
1 Y=7680 Z=0 V=1 C=30720 G=10 U=4 SC=0 R=22
 S=36876 S1=S+2 X=0
2 PRINT"[illegible]" POKES+3,8 POKES1 15 POKES-7,255
4 POKE650 255
5 G$="[illegible]"
6 FORL=8164 [illegible]
7 F[illegible]D=1TO2
8 Q=INT(RND(1[illegible] +8164 POKE[illegible] D=0
10 A$(1 =      DE      C    DE
11 A$(2)="  DE           C
12 A$(3)="              DE        DE "
13 A$(4)="        C          DE      '
14 A$(5)=                       C    '
15 A$(6)=   DE            C          '
16 A$(7 =   C       DE         .
20 FOR[illegible]
24 Z=5
25 FORL=1TO6STEP2
26 PRINT[illegible] T$(G$,Q)RIGHT$(A$(L) 2[illegible] LEFT$(A$(L),I)
27 Q=Q-2
28 PRINTLEFT$(G$ Q)RIGHT$(A$(L+1),I)LEFT$(A$
(L+1  22-I)
29 Q=Q+2 NEXTL IFQ>13THEN80
30 FORL=2TO4STEP2 GOTO26
40 IFPEEK(X+Y)=32AN[illegible]
80 [illegible]
90 IFP=-22THE[illegible] POKEZ+U+[illegible]
100 POKEU+Z [illegible]Z+V
1[illegible] IFZ<1ORZ>20THENV=-V
120 POKEU+Z,7 POKEU+Z+C,3
130 GETZ$
135 IFZ$="N"ORZ$="M"THENPOKEY+X,32 IFPEEK([illegible]Y+22)
=1THENPOKEY+X+22,32
137 IFG=10ANDZ$<>"Z"THENFORT=1TO50 [illegible]
[illegible] 22
140 IFZ$="N"AND[illegible]>0ANDG<>10THE[illegible]
150 IFZ$="M"ANDX<21ANDG<>10THE[illegible]+1
160 IFZ$="Z"[illegible]G<>10ANDR=22THEN[illegible]
162 IFZ$="Z"AND[illegible]-22ANDM=0THEN[illegible]-22 GOSUB600
165 POKES+1 0
170 IFZ$="Z"ANDG=10THENY=U+22 [illegible]=Z G=22
200 GOSUB490
209 IFPEEK(X+Y)=7THENSC=SC+500 [illegible]
[illegible]
210 [illegible]=2THEN[illegible] POKE(X+Y) 32 [illegible]SC+INT
(RND(1)*20)[illegible]200   1
220 POKEX+Y 0 POKEX+Y+C,1
225 IFM<>0THENGOSUB510
230 IFPEEK([illegible]+22)=2THENSC=SC+500 R=-R POKEZ+U 32
Z=11 GOSUB500 GOSUB1000 C[illegible] GOTO24
290 IFCX=1THEN40
300 NEXTI
310 IFR<22THEN20
320 GOTO80
```

Moonlander
by D Patterson

Microradio

GW6JJN

A giant umbrella

Last week I mentioned wrist radios No it wasn't a joke It has become a real and exciting possibility The aeronautical and space company Lockheed have announced and demostrated a giant antenna of aerial that is to be used in space

Originally developed for NASA the antenna will measure over 50 metres across Its design is like that of an enormous flower consisting of petals made from graphite epoxy and a fine mesh of gold-plated wire The antenna can be rolled up and loaded aboard the space shuttle for transportation into space Once the shuttle is in orbit, the antenna will be off loaded and unfurled rather like a giant umbrella

The sheer size of the antenna will make it extremely sensitive to tiny signals from Earth A small wrist radio will be quite sufficient for the space antenna to pick up the signal say Lockheed Once the signal has been received, it can be retransmitted by the logic onboard the antenna satellite to anywhere within the hemisphere that can be "seen" by the antenna. This will provide communication throughout a complete continent such as Europe or North America

The antenna will be in an orbit that is about 24,000 miles above the surface, placed in such a way that the dish is geostationary That means that it will be in an orbit calculated to be the same as the Earth s own orbit and, therefore, to all intents and purposes, always in the same area

Geostationary orbits are old hat now that the television satellites use them, but this antenna will mean that not only simple communication will be possible, but also some very interesting geophysical research An example of this will be the relaying of radio telescope signals from outside the atmosphere of Earth which is always a limiting factor

There are vast areas of the Earth that are inhospitable and completely without any telecommunications Areas such as Northern Canada and Alaska will be opened up and expeditions and research teams will no longer be cut off from the outside world This will enable the exploration of these areas to be conducted more safely and the search for natural resources made a less hazardous undertaking

With the use of computerised packet switching techniques, many consumers could be handled each with their own wrist radiophone The possibilities are really enormous and it will mean that emergency services and help could be summoned instantly The very idea of wrist radios is very "Tommorrows World" in concept, but the Lockheed project brings that idea much closer

The success of the project will obviously decide the future of the idea which is really only new in scale, but this may well be the forerunner of larger antennas that will revolutionize communications as we know them To get some idea of the scale of this, think of the dome of St Paul's Cathedral in orbit More on revolutionary communications next week when we shall look at cellular radio

Ray Berry GW6JJN

This column is written to [illegible] for radio and microcomputer enthusiasts alike. If you have any queries that you want answered, hints and tips to share or topics that you would like to see covered write to Ray Berry, Microradio *Popular Computing Weekly* 12-13 Little Newport Street, London [illegible]

Meteors

on BBC

This is a very simple game in which you have to steer your spaceship through a meteor field. The longer you survive, the higher your score is. The skill level reflects the speed of the game. 1 is fast, 10 is manageable.

The game works basically by testing to see if Z or X has been pressed and then moving the ship appropriately. The meteors are printed randomly at the bottom of the screen and they scroll up. Line 160 checks to see if the ship has crashed.

I have tried to make this game as compact as possible so there is plenty of scope to improve it eg colour, multi-colour characters. The keys are Z left, X right.

```
10*TV254
20H=10
30MODE5
40VDU23,240,0,24,60,126,126,126,30,0,23,241,238,238,254,124,56,56,56,16,23;10
,32,0;0;0;
50PRINTTAB(0,3)"Enter skill level"
60PRINTTAB(0,4)"  1  to 10.";
70flag=TRUE:REPEAT:INPUTTAB(6,5)BK:IFBK<1 OR BK>10 THEN VDU7:flag=FALSE:UNTIL
flag
80CLS:TIME=0:REPEAT
81SOUND0,-10,20,1
90K$=INKEY$(0)
100IFK$="Z"THEN H=H-1
110IFK$="X"THEN H=H+1
120IFH<1THENH=1
130IFH>18THENH=18
140FORT=1 TO (BK*5):NEXT
150PRINTTAB(H,0)CHR$241
160IFPOINT((H*64)+32,970)<>0THENPROCcrash
170PRINTTAB(RND(19),31)CHR$240
180IFK$<>""PRINTTAB(H,0)" "ELSEPRINTTAB(H,0)CHR$241
190UNTILFALSE
200DEFPROCcrash
210*FX15,0
220FORC=1 TO 15:FORD=1 TO 25:NEXT:VDU19,0,C,0,0,0:SOUND0,-15,C*10,1:VDU19,1,C+
128,0,0,0:NEXT:VDU19,0,0,0,0,0,19,1,1,0,0,0:CLS
230PRINTTAB(0,5)"Your score was ";TIME
240PRINTTAB(0,10)" Another go(Y/N)"
250REPEAT:A$=GET$:UNTILA$="Y" OR A$="N"
260IFA$="Y" THEN RUN ELSE END
270ENDPROC
```

Meteors
by Phillip Venables

Arcade Avenue

Stop the express

I'm pleased to see that Sinclair's new arcade games have finally seen the light of day (no that's not another dig at their delivery dates). The quality of the games is very high and they are reasonably original.

Of the four games I have seen, I got on least well with *Zipper Flipper* which is like a cross between a pinball machine, a fruit machine and breakout. It was a bit slow and the copy I saw had no instructions.

Driller Tanks has some nice graphic animation and is vaguely reminiscent of *Dig Dug* where you burrow around beneath the surface of the earth avoiding or shooting monsters. Although a familiar format, the game is streets ahead of any version of *Dig Dug* for this micro.

Eric and the Floaters was one of the best games — broadly you run around a maze being chased by large and unnecesarily aggressive balloons (a touch of *The Prisoner* here perhaps?). The graphics, movement and game design are extremely good. Your defence against the balloons is to leave time bombs in their path and hope they are close enough by the time it goes off.

Certainly the most impressive game is *Stop the Express*. It's a wonderful concept based on all those old films where the bad guys chase the good guy along the top of a speeding train. It's also superbly executed with many nice touches like electricity pylons that whizz past giving a real illusion of movement. Playing the game is a bit like playing an exciting version of *Hunchback*.

Above all, this game is hard, hard, hard, and very addictive. If you do get caught you are thrown off the train in an apparently agonising and certainly lethal tumble of limbs. Not for the faint-hearted.

Whilst on the subject of *Hunchback* you should check out *Punchy* from Mr Micro. Although just a jazzed up version of the original game, it is based on Punch and Judy where you play Bobby trying to rescue Judy from the booth by leaping various obstacles, dodging flying sausages, etc. The quality of the graphics makes the original game look poor.

It's a shame so many Spectrum owners must already have the Ocean copy of *Hunchback* because, although less faithful to the original theme, this program has a tremendous sense of fun.

However, the game has also been released for a range of computers ranging from the geriatric Vic20 to the as yet unreleased Amstrad where it should do very well. It is a sign of the quality of the game that Commodore themselves are distributing the version for the CBM64.

Finally, may I congratulate Mr Micro for the quality of their packaging — a large well designed box that displays no less than four screen shots of the action. If we are to see the age of flashy packaging, then I hope it will all become as informative as this.

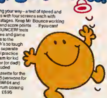
Tony Kendle

The Arcade Corner is a new section for anyone who enjoys playing arcade games. If you have any comments, from playing tips on difficult games or programs you'd particularly like to praise (or blame?) then write to Tony Kendle, Arcade Avenue, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP


ANIROG



Watch out for HI BOUNCER!



leaping your way – a test of speed and tactics with four screens each with eight stages. Keep Mr Bounce working hard and score points ... if you can! HI BOUNCER! tests reflexes and game tactics to the limit. It's so tough that a separate 7 level practice program for kid brother (or dad!) is included.

On cassette for the BBC B (versions for the CBM 64 and Spectrum coming soon) £6.95



Go hunting with CÆSAR THE CAT

Help Caesar clear the larder of mice. Hunting along crowded shelves you guide Caesar as he chases persistent mice which are devouring plates of food. Widely praised when launched on the CBM 64, acclaimed on the Spectrum, Caesar is now here for BBC B owners.

On cassette for BBC B and Spectrum £6.95 and CBM 64 £8.95

Discover the excitement of creative computing with GO SPRITE

a versatile, easy-to-use sprite editor for the Commodore 64 which also demonstrates animation sequences on-screen.

With a choice of joystick, lightpen or user-definable keyboard control Go-Sprite has an icon-driven command system for ease and speed of use.

Go-Sprite can handle up to 32 HiRes or Multicolour sprites and produce overlays up to seven layers.

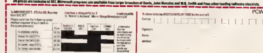
Sprite data files can be made on disk or tape and two accompanying programs enable you to produce data and arrays for use in your own programs.

For the Commodore 64, on cassette £9.95, or disk £11.95

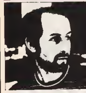
Cuddle your own CÆSAR

We have had so many requests for a toy version of Caesar, the lovable black and white cat featured in our much praised program Caesar the Cat, that we have had some made. He is cute and cuddly with a body length of approx. 12 inches. He is yours (mail order only) for £8.50 (inc. p&p) while stocks last.

All prices are inclusive of VAT. Mirrorsoft programs are available from larger branches of Boots, John Menzies and W.H. Smith and from other leading software stockists.



Tony Bridge's Adventure Corner



Hobbit scores

Since we last looked at *The Hobbit* Hall of Fame, many people have written to me with their scores and, incidentally, some of the bugs that they have across Melbourne House have recently published a book by David Elkan, which looks at some of the ways in which *The Hobbit* can be solved — maybe there is a case for a volume of Hobbitbugs!

First in the HHOF this time round is Jason Hattrell he solved it on his CBM64 in less than two days and a score of 100% "I had read that this is a difficult adventure and was amazed at how easy it was although I thoroughly enjoyed it and was astounded at the graphics, and the way it understood all the various sentences you can type in I am fourteen years old, and this was my first adventure " I hope you have many years of adventure solving, Jason!

James Arnold of Camberley, also on a CBM64 with a score of 95%

David Andrew and Trevor Smith of Sunderland, again on a CBM64 and a score of 92 5% "We enjoyed *The Hobbit* and still find pleasure in it as it varies each time you play it We think it is the best adventure game we have come across so far. We are now busy with Interceptor s *Heroes of Karn* but are stuck We cannot get past the pirate or the serpent, and how do you get Beren? We read your page first every week and would like your opinion on *Valhalla* as we are thinking of buying it.

Valhalla is not so much an adventure as a computer movie The player can sit back and watch the action unfolding on the screen or can intervene to alter the course of events The game is a little slow but features fairly sophisticated command input. You won t find the traditional adventure format followed in *Valhalla* — and there are not a lot of complex puzzles to be solved. The plot takes the form of a number of quests that have to be completed before *Valhalla* is attained The scope of the game along with the book included in the packaging make this adventure well worth the seemingly expensive asking price The Commodore version of *Valhalla* is a bit faster and more colourful than the original Spectrum game Legend have taken out a £2 million insurance policy, would you believe, against it being pirated before the official release! As for *Heroes of Karn*, I hope to be looking at this one in more detail in a forthcoming Corner, as several people appear to be stuck in it If you have completed this one, or got some way with it, how about dropping The Grand Elf a line about it?

Gregor Houghton with a score of 75% on, I presume his Spectrum Your score Gregor, is what you see before you place the treasure in the chest — to increase it you must solve a few more puzzles along the way Gregor has noticed the well-known *Hobbitbug* (try entering EN Do which elicits the answer about everything evaporating and The Crack being dead), but has also found the answer "You swing a broadside, but the elting moves out of the way of your sword"!

Brian Ure, with 67 5% — Brian is another *Hobbit* who is wondering where the extra percentage is going to come from Well Brian, as you know *The Hobbit* can be solved in more than one way and you are going to have to explore Middle Earth thoroughly to pick up those extra points Some people have gone out Troll-bashing after depositing the treasure while others take the more conventional route of picking up everything they can and visiting every location As a rough guide you can expect to finish the adventure with a score of around 50–60% if you go straight through, and you can pick up around 2 5% for other locations visited and objects picked up

J J Smith of Port Glasgow Ron Pearson of Kettering, with a score of 95% (the first time round) on his CBM64 Ron Smith of Northants, who very kindly sent me solutions to *The Hobbit* and several other adventures for the Spectrum K Finney of Wigan, with a score of 50% Michael Whitehurst of Staffs with a score of 100% (or as it appears in the CBM version, 0 0%) Chris Stamp and his brother, with 95% on a CBM (it seems to be taking over from the Spectrum as the favourite *Hobbit* machine) "Another adventure to be recommended for the CBM64 is *Aztec Tomb* from Alligata This is a very entertaining game, and I enjoy it very much although I haven t completed it and the spelling is awful (even "Tomb" is spelt "Tumb")! Apart from that a number of people are asking about, and I will be mentioning it in more detail at a later date Incidentally, Chris has three games of his own on the market one of which *Zorgon s Kingdom* for the Vic20 marketed by Romik is described as "a real-time graphic adventure" although Chris prefers to think of it as an arcade game!

David Fearn of Huntley in Gloucestershire, who scored 92 5% on his CBM64 (within two hours of purchase!) and 62 5% on his Spectrum (4 months from purchase, we'll put that down to the old "dead flesh" keyboard of the Spectrum) Look in *PCW* Vol 2 No 11, for Paul Shreeve s name who unfortunately beat you to "the double" David.

Ian Ritchie, with 62 5% on his Oric for a change He has found a little bug — the Barren Land is called, on a second visit "Dragonccdreadfuldesolation"! Your findings going from Beorn's House Ian are quite normal and par for the course

Spencer Richards of Theydon Bois in Essex a score of 72% came at just one last attempt "After months of frustration, I m greatly relieved! PS I entered your name in Crystal s *Invasion of the Body Snatchers* and was greeted with a hail of trumpets and singing angels! Thank crystal for a fantastic game".

Steve Hammett with 55% also on his Oric-1 "I cannot pass Gollum — when he asks me the riddle about 'dark" from the book, I answer "dark and he strangles me How can I get past?" You should not answer the riddles if you don t know the answer as you will certainly be killed should he follow you with the short sword

Next week more HHOF

This series of articles is designed for novice and experienced Adventurers alike Each week Tony Bridge will be looking at different Adventures and advising you on some of the problems and pitfalls you can expect to encounter So if you have an Adventure you want reviewed, or if you are stuck in an Adventure and cannot progress any further write to Tony Bridge Adventure Corner, *Popular Computing Weekly* 12-13 Little Newport Street, London WC2R 3LD

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Problem ....

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Name ....

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Foolish words

Some time ago D Capsuck wrote to PCW enquiring whether there was an implementation of the Cesd language on the ZX SPECTRUM

A At that same time we said that we didn't know of one. Foolish words as it turned out. Not only have we been informed (politely) of Spectrum versions but ... well see for yourselves

Machine Spectrum *Supplier* S Proctor, 27 Richardson Close, Leeds *Price* £3 *Machine* Spectrum *Supplier* D Ross Encom Computers, 54 Fore Street Bradninch, Exeter *Price* £7 *Machine* BBC *Supplier* A Boswell, 16 Burchfield Rd, Sunderland *Price* £4

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Micro music

S Berkfield, of Coulsdon, Surrey writes

Q I have become very interested in electronic and computer music, and I would be grateful for any information you could give me on synthesisers, particularly those in the price range up to £500.

A This is not really my field. I would have thought that your question would have been better directed at a music magazine (*Which Keyboard?*) But I do have another suggestion to make. The BBC micro is compatible with a large number of synthesisers which it can be used to control. Also, Casio offers a Centronics printer interface connection for its MT-200 music keyboard. Any micro with a Centronics interface can be connected. The MT-200 costs £129. The interface is £29.50

A legal claim

J M Bright of Potters Bar, Herts writes

Q Having bought my son a Commodore 64 for Christmas — it being highly recommended — we were very upset to find that he has had to return it twice to the place where we bought it because it has been faulty. Eventually, they kindly refunded the money and have been very fair about it.

Surely we should be able to lodge our complaint directly with the manufacturers. I would welcome your advice on this matter, and if possible an address to write to.

A One of the saddest things about buying presents — whether it be a computer or anything else — is when they go wrong or don't work. The feeling of disappointment and annoyance is bound to persist despite any good treatment you receive from the retailer who sold you the machine.

Under the law you do not really have any legal claim against Commodore, whose machines in any case are no more unreliable than any of the other popular home micro manufacturers.

I will nevertheless give you an address to write to: Commodore Business Machines (UK Ltd), 6785 Ajax Avenue, Trading Estate, Slough, Berks SH 4BG

Monitored colour

Percy Ellis of Wotton-under Edge, Glos writes

Q I have the chance of a colour monitor for use on a Spectrum 48K. Can I use it? If not, what modifications, adaptations are necessary to make the correct connections?

A If the monitor is a 122A Microvitec 1431 then you can use it with no modifications at all. If not, then you've got quite a lot of work to do.

Page 160 of the Spectrum manual shows the edge connector in diagramatic form. You will have to solder (using an extension edge connector) two wires: one to the video line and one to 0 volts. These will then form the input/output lead to your monitor. Without invalidating your warranty there is nothing else you can do.

In all honesty, I would advise you to seek professional advice (ie, electrical) before you try making you own leads, etc.

One last thought: there is a new book on the market *The Complete Sinclair Database* by Adams, Beardsmore, and Gilbert which actually covers this topic.

Problem cassette

Ian Rossitor of Southampton writes

Q I own a CBM64, and have been trying to load Imagine's *Cosmic Cruiser* and *Pedro* without success. I know the tapes are OK because they load and run perfectly on a friend's computer. I have had the heads cleaned, and the leads verified by my helpful dealer without any luck.

The games crash when the Imagine emblem is supposed to appear. Please tell me what it could be, or should I stop buying Imagine tapes?

A I have had a number of letters regarding tape loading problems on the CBM64. In each case the tapes concerned load perfectly well on another machine. The problem has to be with the cassette recorder.

Cassette loading problems occur on all machines and the causes tend to be either:

a) dirty heads — use a cassette head cleaner

b) magnetised heads — use a cassette head demagnetiser

c) heads out of alignment — adjust the AZMUTH screw

Unfortunately, there is no simple solution to every problem: it is just a matter of hit and hope. I don't think that in your case there is any reason to boycott Imagine tapes as they work quite satisfactorily on your friend CBM64

What's the difference?

Malcolm Singh of Dartford, Kent writes

Q I would like to know the difference between the BBC 'B' and a BBC 'A'. Is there a change in the graphics screen? What is the difference between the operating systems in these machines?

A Without writing a book I would say that the Model A is a Model B with a lot of facilities missing.

The Model B is far superior to the A in very many respects — both in the hardware and in the operating system software. A considerable proportion of the commercial software written for the BBC will only run on the B so it is just as well it is possible to upgrade from an A to a B!

I'm sorry for the brevity of my answer but as I said earlier ... I could write a book

Hi-res mono

B J Greenstock of Ware, Herts writes

Q With the software supplied with the QL, does colour play a vital part or could one use a high resolution monochrome monitor?

A Whilst colour will undoubtedly enhance the screen displays of the QL software, it is extremely unlikely that it will play a vital role. It would seem to me that a black and white monitor would be extremely well suited to the task of displaying the 'business style' information of the Psion QL packages.

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem *Peek* it to Phil Rogers and every week he will *Poke* back as many answers as he can. The address is *Peek & Poke*, *PCW*, 12-13 Little Newport Street, London WC2R 3LD.

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Diary

Event	Venue	Dates	Admission	Organisers
Micro Trade 84 (Trade only)	Barbican London	July 4-6 10 00am-6 00pm	Free	Montbuild Ltd. 11 Manchester Sq London W1 01-486 1951
The Graig Microfair	Graig School Pwll Llanelli Dyfed	July 7 11 00am-6 00pm	50p	Graig School Parents Association c/o 5 Warborough Close Llanelli Dyfed SA15 3LH
What Micro? Computer Show	Battersea Park London	July 14-15 10 00am-7 00pm	£1.50	VNU Business Publications Evelyn House 62 Oxford Street London W1A 2HG 01-636 6890
Electron and BBC Micro User Show	Alexandra Palace London	July 19-21 10 00am-6 00pm July 22 10.00am-4 00pm	£3 00 adults £2 00 children	Database Publications 68 Chester Road Hazel Grove Stockport 061-456 8383
Sinclair Computer Users Exhibition	Essex Exhibition Centre Moulsham Street Chelmsford Essex	July 21 10 00am-6.00pm	50p adults 30p children	Essex Exhibition Centre Moulsham Street Chelmsford 0245 25800
Scottish Personal Computer World Show	Assembly Halls George Street Edinburgh	July 26-27 9.30am-8 00pm July 28 9 30am-5 00pm	£1 50 adults £1 00 children	Scottish Industrial and Trade Exhibitions 64 Charlotte Square Edinburgh EH2 4GN 031-225 5486



ADVENTURE HELPLINE

Micro *Spectrum*
Adventure *Hobbit*
Problem *How do you enter the magic door at the elvenkings halls and at the elrah clearing*
Name *Ian Holman*
Address *17 Heald St, Newton le Willows Merseyside*

Micro *Spectrum 48k*
Adventure *Espionage Island*
Problem. *I do not know what to do when I have landed and anstrayed the parachute*
Name *Master Simon Patton*
Address *23 Birchside, Dunstable*

Micro *48K Spectrum*
Adventure *Velnor's Lair (Quicksilva)*
Problem *How do you get past the crocodile in the river?*
Name *Moz*
Address *98A The Broadway Tolworth Surbiton Surrey, KT6 7HT*

Micro *48k Spectrum*
Adventure *Snowball (Level 9)*
Problem *How do I open the smooth doors? Where do I get the space suit from?*
Name *J Slater*
Address *40 Watford Rd, St Albans Herts AL1 2AH*

Micro *Spectrum*
Adventure *Hobbit*
Problem. *Cannot get out of a dark dungeon in the elvenkings halls dark being the operative word in enclosed sheet*
Name *Michael Gate*
Address *32 Panorama Rd Swanage Dorset BH19 2QT*

Micro *Vic 20*
Adventure. *The Wizard and the Princess*
Problem *I can not find my way through the maze (chapter 3)*
Name *Marcus Bailey*
Address *Ivy Cottage Southway Middlewich Cheshire*

Micro *Spectrum*
Adventure *Planet of Death (Artic)*
Problem *What do you do when you come to a speaker with dance music coming out of it and what does the clue mean and also what to do with the computer and the key*
Name. *Andy Dolmer*
Address *14, Lindsay Road, Worcester Park, Surrey, KT4 8LE*

Micro *Vic 20*
Adventure *Adventureland*
Problem *How do you kill the dragon and how do you get the royal honey?*
Name. *Richard Edwards*
Address *Cottret Fords Heath Nr Shrewsbury Shropshire SY5 8QD*

Micro *48k Spectrum*
Adventure *Pimania by Automata*
Problem *The start is my problem It draws some funny shaped things at the back and a road coming out Then it puts up a cursor Nothing I type in does anything*
Name *Charles Bagot*
Address *2 Green Lane Chesham Bois Amersham Bucks HP6 5LN*

For sale

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ACE TRONIC TV game centre & 3 cartridge for CBM 64 (4 tapes) Sell £15 00 Tel Portsmouth 828123

DODGE AND COLLECT

Unique is another masochistic new company trying to make it in the nightmareishly competitive Spectrum market. You have to admire its guts.

Clerky is a dodge and-collect game dedicated to the white collar labour force that fills our lives with paper and runs the country.

You control Clerky, who seems (if the cover picture is anything to go by) a potential heart-attack victim, and have to rush around collecting pieces of paper whilst avoiding flying rubbers and ink pots.

It's quite astonishingly fast, with the only sensible tactic being to run about as fast as possible and never stand still. Pretty soon you will start to sympathise with Clerky and feel equally exhausted. Addictive in a frenzied sort of way.

Program	*Clerky*
Price	*£5.99*
Micro	*Spectrum*
Supplier	*Unique* *16 Thorney Lane South* *Iver* *Buckinghamshire*

GLIDE PATH

Heathrow Air Traffic Control was a complex program for the Spectrum which simulated the job of an air traffic controller supervising the movement of a variety of aircraft.

The program is now available for the Commodore 64 with a number of extra features including the occassional Concorde which zooms around making life difficult because of its speed.

Using only a radar screen and something called a stack display which gives you information on each aircraft as it enters the radar area, you have to cope with different speeds, glide paths, altitudes, random hazards, wind speeds and somehow get all the aircraft safely through your area.

This involves issuing appropriate commands to each individual aircraft to guide it safely past all the other aircraft in the area. This is a very complex simulation requiring more time than the average.

If you have the patience to stick with and run the demo routines through several times you'll probably find this one has an appeal that doesn't wear off after a few months.

Program	*Heathrow Air Traffic Control*
Price	*£7.95*
Micro	*Commodore 64*
Supplier	*Hewson Consultants* *7 Grahame Close* *Blewbury* *Oxon OX11 9QE*

REASSURING

Todd Rundgren once sang — so long ago one is embarrassed to remember — 'keep your eye on the icon'.

Never was a truer word spoken by a hippy wiz kid. Icons are what's happening, man.

Go Sprite is a sprite designer program for the Commodore 64, not the first and certainly not the last but different from the rest — it's got icons. Icons are pictures that represent the actions you require performed and having them in your program is a bit like living in a mansion in Hampstead rather than a workers collective in Bromley-by-Bow.

Constructing, augmenting, and changing colour of your sprites is all done using icons as is animation and saving. There are all sorts of little boxes illustrating the various steps in sprite design — you simply point a cursor on the screen to the relevent box.

Icons really are pretty wonderful things. Apart from anything else, they are so much more reassuring and friendly than vast menus written in horrible jargon. Presumably there is a price to be paid in terms of user available memory, but nevertheless if you don't have a sprite program this one will do fine.

Program	*Go Sprite*
Price	*£9.95*
Micro	*Commodore 64*
Supplier	*Mirrorsoft* *Holborn Circus* *London EC1*

BOUNCY, BOUNCY

Kosmik Kanga is an excellent new game from Micromania — rather in the *JetPac* mould.

The idea is to bounce a kangaroo across several different screens past buildings, deserts, beaches collecting a variety of objects but avoiding obstacles like planes and trains.

It's all sprites and good animation — the only technical problem being attributes conflicting producing flicker, something Ultimate seem to have either solved or avoided.

Don't let that put you off, though, the graphics are nicely designed, the game has some original touches and the whole thing has been produced with a good deal of wit.

Program	*Kosmic Kanga*
Price	*£5.95*
Micro	*Spectrum*
Supplier	*Micromania* *14 Lower Hill Road* *Epsom* *Surrey*

Pick of the week

MOVING COMIC STRIP

Ugh! was one of the first 'new wave' Dragon games to show that the machine was capable of handling good quality graphics after all.

Now Softek have adapted the game for the 48K Spectrum and I think it's even better. The idea of the game is to move a caveman up a twisty track to a cave and collect the eggs that are kept there.

Hampering the caveman are Pterodactyl who does not like her eggs being stolen and an amiable looking dinosaur who is on her side — presumably figuring that creatures with small brains had better stick together.

The graphics are wonderful not so much because they are smooth scrolling sprites (more or less mandatory these days if you're going to keep up with Ultimate) but because of the superb graphic design. All the characters are drawn in black in a mixture of outline and shading that is just like a cartoon. Here lies the success of the game — it really does look like a moving comic strip which you can also play.

Program	*Ugh!*
Price	*£5.95*
Micro	*Spectrum*
Supplier	*Softek* *12/13 Henrietta Street* *Covent Garden* *London WC2*

DEVIATION

Maths buffs could find the *Maths Utilities* library useful This is a collection of various maths programs including a graph plotter, linear regression, various kinds of deviation, numerical integration, etc, etc There are 12 programs in total, each one provided with a basic explanation of how it functions

The price below is for the complete set, although it can also be purchased as three seperate packs for £5 50 each

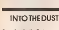
Program *Maths Utilities*
Price *£8 95*
Micro *Spectrum*
Supplier *Solway Software*
6 Curzon Street
Maryport
Cumbria
CA15 6LL

INTO THE DUST

Superbowl is the first computerised version of American Pro Football and, curiously enough, it is for the Dragon 32

Until recently most Dragon games were unspeakably dreadful, as often as not in Basic with nasty black-on-green graphics It's ironic that the Dragon seems to have run into trouble just as the software started to get quite reasonable.

Superbowl is a case in point It has animated sprites to depict football star Floyd and the massed, enormously large shouldered, ranks of the opposing Washington team Floyd has to catch the ball and run with it as far as he can before the Washington team grind him into the dust



The whole thing is written in machine-code — it looks great and plays well. Incidentally the Dragon 32 can now be found for prices between £79 and £59 if you hunt around, it has to be great value, particularly with software of this quality around

Program *Superbowl*
Price *£6 95*
Micro *Dragon 32*
Supplier *Cable Software*
Cape House
52 Lonbury Road
Luton
Beds
LU3 2PL

INTERMINABLE

War of the Worlds was released with much trumpeting recently — the game is based less on the orignal book by H G Wells and more on the musical concept album released a few years ago by Jeff Wayne

The original music is featured in snatches and is apparently also used to give you clues throughout But what sort of thing is *War of the Worlds?* The best answer is that whilst it is not exactly an arcade game or an adventure neither is it like Ultimate's recent games or Miner Willy's adventures In fact, with its ropey scrolling and little matchstick men it reminds me of nothing so much as *Uncle Groucho* by Automata except that it adds interminable screens of text which seem unavoidable and removes all of Groucho's humour

Since one of the major objectives of the game involves Carrie the girl you love it can be assumed that CRL are happy to alienate many women from the game, who generally speaking can't be expected to raise much enthusiasm for such a concept

Controls are a mixture of the usual up, down, left, right and single key press instructions like Eat, Drink, Get etc, occasionally there are arcade sequences of an embarassingly simple 'dodge the laser beam' kind — the rest is a matter of wandering about Actually wandering is wrong-your man moves as though being pulled along on a trolley, trying to find the six locations featured in the story in the correct order

I wouldn't ordinarily be so hard on a game but since the thing costs £7 95 — £2 more than most other computer games for the Spectrum — and the few good loader screens and the other impressive graphics have been esigned using Melbourne House's *Draw* program I think Computer Rentals had better chalk this one up to experience and think again

Program *War of the Worlds*
Price *£7 95*
Micro *Spectrum*
Supplier *Computer Rentals*
CRL House
9 Kings Yard
Carpenters Road
London E15 2HD

HIGH BLOOD PRESSURE

Thor software's first (to my knowledge) release was *Jack and the Beanstalk*, a game that, in some charts at least, is currently residing at number one — not bad going

The company has released a number of other programs for the Spectrum Vic and BBC B Having missed out on reviewing *Jack and the Beanstalk* (it's great) I thought I'd rectify it by covering one of the newer titles

Twilight Zone is a real piece of bang bang shoot 'em-up as the Jeff Minter, react or die, tradition (have you ever considered that the software industry could coin the term 'Minteresque' in the same way that plays are sometimes termed 'Pinteresque'?) but done well there's nothing wrong with that.

You have two ground bases one horizontal, one vertical, and must blast away at a variety of strange shaped, erratically moving, aliens Co-ordinating the two bases is difficult enough but adding to your problems is the fact that you cannot fire repeatedly but must wait until each bullet has run its course

Nothing dramatic but a good game for fans of this genre who enjoy having their blood pressure and adrenalin raised Has the BMA been informed?

Program *Twilight Zone*
Price *£5 95*
Micro *Spectrum*
Supplier *Thor Computer Software*
Erskine Industrial Estate
Liverpool

BIZARRE STORY

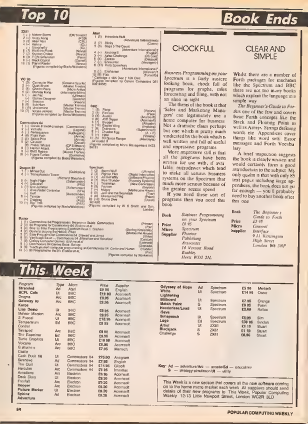
Storyline is an educational program for the BBC B which reminds me vaguely of that party game consequences

The idea is to construct a story The computer suggests words and the child accepts or rejects them according to whim, creative decision making or whatever At the end, a probably highly bizarre story is created

If you get bored with the existing options you can change the word data and insert your own In this age of video nasties, I should think that's asking for trouble

Program *Storyline*
Price *£7 95*
Micro *BBC B*
Supplier *Daco Software*
59 Mackenzie Road
Moseley
Birmingham

New Releases is designed to let people know what software is coming on to the market If you have a new game or utility which you are about to release send a copy and accompanying details to New Releases Popular Computing Weekly 12 13 Little Newport Street WC2R 3LD



Top 10

ZX81

1	( )	Meteor Storm	(DK Tronics)
2	(–)	Krazy Kong	(PSS)
3	(3)	Alien Rain	(CRL)
4	(–)	History	(ICL)
	( )	Geography	(ICL)
6	(7)	Walk the Plank	(Novus)
7	(2)	Krypton Orders	(Novus)
8	(3)	Flight Simulation	(Psion)
9	(–)	Black Crystal	(Carnell)
10	(1)	Planet Raider	(Novus)

(Figures compiled by Boots/Websters)

VIC 20

1	(3)	Computer War	(Creative Sparks)
2	(–)	Duck Shoot	(Master Tronics)
3	(6)	Chariot Race	(Micro Antics)
4	(2)	Donkey Kong	(Interceptor Micro)
5	( )	Jet Pac	(Ultimate)
	(–)	Games Designer	(Galactic)
7	(–)	Snooker	(Visions)
8	(6)	Sub Hunt	(Master Tronics)
9	(10)	Undermine	(Master Tronics)
10	(7)	Vegas Jackpot	(Master Tronics)

(Figures compiled by Boots/Websters)

Commodore 64

1	(–)	Gandalf & the Microchips	(Commodore)
2	(–)	Valhalla	(Legend)
3	( )	Renaissance	(Audiogenic)
4	(8)	Flight Path	(Anirog)
5	(6)	Space Pilot	(Anirog)
6	(2)	Cavelon	(Ocean)
	(4)	Pinball Wizard	(CP Software)
8	( )	Harrier Attack	(Commodore)
9	(–)	BMX Racers	(Master Tronics)
10	(–)	Purple Turtles	(Quicksilva)

(Figures compiled by Boots/Websters)

Dragon 32

1	( )	Mined Out	(Quicksilva)
2	(–)	Transylvanian Tower	(Richard Shepherd)
3	(–	Night Flight	(Salamander)
4	(–)	Defender	(PSS)
5	( )	Star Jammer	(Salamander)
	( )	Area Radar Controller	(SFA)
	(–)	Golf	(Salamander)
8	(–)	Teastar	(PSS)
	(–)	Dragbug	(PSS)
10	(–)	Star Trek	(PSS)

(Figures compiled by Boots/Websters)

Atari

1	(1)	Incredible Hulk	(Adventure International)
2	(7)	Rialty	(Comm)
3	(5)	Saga 5 The Count	(Adventure International)†
4	(–)	Airstrike II	(English)
5	(–)	Aztec Challenge	(US Gold)
6	(4)	Zaxxon	(Datasoft)
7	(–)	Encounter	(Movagen)†
8	(11)	Rally Speedway	(Adventure International)*
9	( )	Enchanter	(Infocom)†
10	(9)	Flak	(Funsoft)‡

* Cartridge ‡ 48K Disc † 12K Cass
(Figures compiled by Calisto Computers 021 632 6458)

BBC

1	(2)	Pengo	(Visions)
2	(1)	Fortress	(Pace)
3	(4)	Aviator	(Acornsoft)
4	(8)	JCB Digger	(Acornsoft)
5	(7)	Slagger	(Alligator)
6	(10)	Eagles Wing	(Imagine)
7	(6)	Overdrive	(Superior soft)
8	(–)	Chuckie Egg	(A + F)
9	(–)	1984	(Visions)
10	(5)	3D Space Ranger	(Microbyte)

All model B
(Figures compiled by Micro Management 0473 59181)

Spectrum

1	(2)	Sabre Wulf	(Ultimate)
2	(3)	Fighter Pilot	(Digital Integration)
3	(1)	Jet Set Willy	(Software Projects)
4	(7)	Blue Thunder	(Foundry Systems)
5	( )	Trashman	(New Generation)
6	(5)	Psytron	(Beyond)
7	(–)	Mugsy	(Melbourne House)
8	(3)	Jack and the Beanstalk	(Thor)
9	(8)	Chequered Flag	(Psion)
10	(10)	Scuba Dive	(Durell)

All 48K
(Figures compiled by W H Smith and Son, London)

Books

1	(1)	Commodore 64 Programmers Reference Guide *Commodore*	(Primer)
2	(3)	60 Programs for Commodore 64 *Erskine et al*	(Pan)
3	(4)	Step by Step Programming Spectrum Book 1 *Graham*	(Dorling Kindersley)
4	(2)	Guide to playing the Hobbit, *Elkan*	(Melbourne House)
5	(7)	Easy Programs for Commodore 64 *Stewart and Jones*	(Shiva)
6	(6)	Very basic Basic — Commodore 64 *Blackshaw and Schofield*	(Century)
7	(8)	Creepy Computer Games *Erskine et al*	(Usborne)
8	(–)	Commodore 64 Games Book *Bishop*	(Granada)
9	(9)	Teach yourself computer programming on Commodore 64 *Carter and Huzan*	(Hodder)
10	(–)	60 Programs for Vic 20 *Erskine et al.*	(Pan)

(Figures compiled by Bookwise)

Book Ends

CHOCK FULL

Business Programming on your Spectrum is a fairly austere looking book, chock full of programs for graphs, sales forecasting and filing, with not an alien in sight

The thesis of the book is that 'Sales and Marketing Managers' can legitimately use a home computer for business Not a dramatic claim perhaps but one which is pretty much vindicated by the book which is well written and full of useful and impressive programs

More impressive still is that all the programs have been written for use with, if available microdrives which tend to make all serious business systems on the Spectrum that much more serious because of the greater access speed

If you need these sort of programs then you need this book

Book	*Business Programming on your Spectrum*
Price	*£6 95*
Micro	*Spectrum*
Supplier	*Phoenix Publishing Associates 14 Vernon Road Bushley Herts WD2 2JL*

CLEAR AND SIMPLE

Whilst there are a number of Forth packages for machines like the Spectrum and BBC there are not too many books which explain the language in a simple way

The Beginner's Guide to Forth is one of the few and covers basic Forth concepts like the Stack and Floating Point as well as Arrays Strings defining words etc Appendices cover things like word sets Error messages and Forth Vocabulary

A brief inspection suggests the book is clearly written and would certainly form a good introduction to the subject My only qualm is that with only 85 text pages including large appendices, the book does not go far enough — you ll probably need to buy another book after this one

Book	*The Beginner's Guide to Forth*
Price	*£2 95*
Micro	*General*
Supplier	*Interface 9 11 Kensington High Street London W6 5NP*

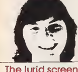
This Week

Program	*Type*	*Micro*	*Price*	*Supplier*
Stranded	Ad	Atari	£9 95	English
BCPL Calc	Ut	BBC	£19 90	Acornsoft
Drogna	Arc	BBC	£9.95	Acornsoft
Gateway to Karos	Arc	BBC	£9.95	Acornsoft
Lisp Demo	Ut	BBC	£9 95	Acornsoft
Meteor Mission	Arc	BBC	£9 95	Acornsoft
S Pascal	Ut	BBC	£16.95	Acornsoft
Temperature Control	Ed	BBC	£9 95	Acornsoft
Tetrapod	Arc	BBC	£9 95	Acornsoft
The Examiner	Ed	BBC	£9.95	Acornsoft
Turtle Graphics	Ut	BBC	£19 90	Acornsoft
Volcano	Arc	BBC	£9.95	Acornsoft
Galtumere Castle	Arc	BBC	£7.95	Mertech
Cash Book 64	Ut	Commodore 64	£75.00	Anagram
Stranded	Ad	Commodore 64	£7 95	English
The Quill	Ut	Commodore 64	£14.95	Gilsoft
Hercules	Arc	Commodore 64	£9 95	Interdisc
Arcadians	Arc	Electron	£9.95	Acornsoft
Desk Diary	Ut	Electron	£9.20	Acornsoft
Freefall	Arc	Electron	£9 20	Acornsoft
Hopper	Arc	Electron	£9.20	Acornsoft
Picture Maker	Ut	Electron	£9.20	Acornsoft
Sphinx Adventure	Ad	Electron	£9.25	Acornsoft
Odyssey of Hope	Ad	Spectrum	£5 95	Mertech
White Lightening	Ut	Spectrum	£14 95	Oasis
Billboard	Ut	Spectrum	£7 95	Orange
Match Point	S	Spectrum	£9 95	Psion
Headerless/Load /Save	Ut	Spectrum	£3.60	Reflex
Simspeech	Ut	Spectrum	£8 95	Sim
Logo	Ed	Spectrum	£39 95	Sinclair
Artist	Ut	ZX81	£1 10	Stuart
Blackjack	S	ZX81	£1 10	Stuart
Challenge	S	ZX81	£0.95	Stuart

Key: Ad — adventure/Arc — arcade/Ed — educational
S — strategy-simulation/Ut — utility

This Week is a new section that covers all the new software coming on to the home micro market each week All suppliers should send details of their new programs to This Week, Popular Computing Weekly 12-13 Little Newport Street, London WC2R 3LD

Ziggurat



The lurid screen

Up and down the country, publishers are converting their authors to word processors Writers everywhere are beginning to have to commit their immortal prose to the lurid screen and floppy disc instead of the time-honoured type or manuscript

From the publishers point of view this all makes good sense It is after all much cheaper to produce a book or a magazine if it can be written, revised, edited and typeset in one continuous process No more messy re-drafts No more expensive retyping or resetting

But what about the implications of all this for our literary heritage?

The latest school of thought among literary boffins is that a book — or poem — is not just the finished products which you or I see when we take a neatly bound volume down from the shelf Rather it is a continuous process No author ever gets it right first time Even the most mundane piece of prose is usually the product of much agonised re-writing

Individual words, lines, or whole chapters may disappear or become unrecognisable on the way to the finished book Many a novel has had its ending completely changed Jane Austin for example, wrote two totally different final chapters for her book *Persuasion*

Which is the 'right' ending then? Probably the answer is neither — there may be the one she *preferred* but we can learn a lot about the way that she worked and about the characters in the book from the 'alternative' chapter

This way of thinking has given rise to a sort of 'literary archaeology In America at Austin University in Texas there is a library devoted to collecting *everything* ever written by famous authors — initial drafts, manuscripts and typewritten copy, typeset versions page proofs — the lot Students can then see how the initial idea was reworked by the author, the publisher and sub-editor, or even by outsiders, like typists who accidentally forgot to include certain lines when retyping a draft or by friends of the author who gave 'advice

The poet TS Eliot for example often sent his poems to his friend Ezra Pound who frequently substantially re-worked them The question then arises just *whose* poems they actually are If he'd sent a floppy disc instead of paper copy we might never know who contributed what

The advent of the floppy disc may spell the end of literary archaeology You can't tell from a word processed block of text what alterations have been made to it or who made them — to say nothing of what has been accidentally omitted The moving cursor deletes or overwrites and having done so moves on and it is impossible to tell what was there before

Moreover, would Shakespeare actually have written better or worse with a Wang? Or might it not have destroyed some of those creative urges? There is after all something inherently less inspiring about a blank VDU than a white sheet of paper

And anyway can the machines cope? What would a spelling checker have made of e e cumming's?

Leonard Cohen once said that some people only called his poems, poems because the words didn't reach to the ends of the lines — suppose his machine had justified them?

As I sit here not putting pen to paper, but cursor to screen I am forced to wonder — do we really want to enslave ourselves to these jumped-up pocket calculators?

Or will the pen be mightier than the micro in the end?

Gail Counsell

Puzzle

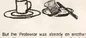
A high price

Puzzle No 114

"This is interesting " remarked Professor Hex at breakfast one morning

As breakfasts were usually silent affairs in the Hex household, the remark indicated that there was some particularly interesting item in the journal that the Professor was reading "They've just found yet another high prime " continued the Professor his voice full of excitement, and his coffee and toast forgotten

"Haven't they found enough already? queried his unfortunate offspring who was more interested in stirring her cornflakes



But the Professor was already on another plane "Two raised to the power of one hundred and thirty two thousand and forty nine minus one, he murmured almost reverently

"It must be pretty big then," was daughter's parting remark as she darted out of the door

Indeed it is quite a large prime — but mused the Professor exactly how big is it? That is how many *digits* are in the evaluation of $2^{132049} - 1$

Solution to Puzzle No 109

Using the formula given $P = n^2 - 79n + 1601$ successive values of p are computed and checked to see if they are prime

10 FOR N = 1 TO 100 **20** LET P = N * N − 79 * N + 1601 **30** FOR X = 2 TO SQR P **40** IF P/X = INT (P/X) THEN PRINT N, " " P GOTO 60 **50** NEXT X **60** NEXT N

Remarkably the formula is very accurate It only fails for five values when n is in the range 0 to 100

These values are 80 81 84 89 and 96

Winner of Puzzle No 109

The winner is T J Vernon, Rustington Close Lower Earley, Reading, who receives £10

Rules

If the puzzle can be sensibly solved using a computer then the winner will have included a listing of the program used to find the correct answer The closing date for entries to Puzzle No 114 is July 20

The Hackers

Look at this! It's a scandal! that's what it is!..

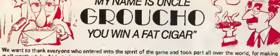
I've just been down at 'Software Shack'





AUTOMATA *is pleased to announce the winners of*





"MY NAME IS UNCLE

GROUCHO

YOU WIN A FAT CIGAR"

We want to thank everyone who entered into the spirit of the game and took part all over the world, for making it all worth while. At last, the moment you've all been waiting for:

THE IDENTITY OF THE MYSTERY PERSONALITY IN THE PROGRAM WAS .. **MICKEY MOUSE**

COMPETITION WINNERS

FIRST PRIZE OF THE CONCORD-OE? VOYAGE TO NEW YORK AND HOLLYWOOD WITH WADS OF SPENOING CASH to Mr. P. A. Daley of Stoke-on-Trent for his winning slogan "THERE'S NO BLOOD IN OUR GAMES, IT'S ALL TOMATA SAUCE!"







SECOND PRIZE to J. McNally of Belfast for "YES, BUT CAN THE STEAM ENGINE DO THIS?"

THIRD PRIZE to I. Walker of Barnsley for "AUTOMATA BEATS THE HELL OUT OF VIOLENT GAMES"

PRIZE FOR THE WORST SLOGAN WITH A CORRECT ANSWER to S. M. Morris of Mid Glamorgan for "GAMES STARRING THE PIMAN, FANTASTIC BUY ONE, JUST AUTOMATICALLY GOOD"

PRIZE FOR OVERSEAS WINNER to Nabil Shehayed of Ouatar, Arabian Gulf

PRIZE FOR SAUCIEST PRINTABLE SLOGAN to M. Kennedy, R A F. Honington for "IF LADY CLAIR WON'T LET YOU PLAY, YOU OUGHTA MATA,"

PRIZE FOR THE MOST INCOMPREHENSIBLE SLOGAN to Stephen Guy of Bolton for "AUTOMATA, VIOLENCE ANO SHOOT EM UP GAME OUT FUN AND A"

PRIZE FOR SHORTEST SLOGAN WITH A WRONG ANSWER to Kutsche of Bremen, Germany for " "

JOINT RUNNERS UP FOR THE SHORTEST SLOGAN WITH A WRONG ANSWER to David Grimshaw of Guildford and Hervard H. Merved of Denmark for " "

SPECIAL PRIZE FOR BAD TASTE SLOGAN WITH THE WRONG ANSWER to David Ahrens of Gravesend for "AUTOMATA TOOK THE 'P' OUT OF COMPUTING "

SPECIAL PRIZE FOR THE MOST INCORRECT SOLUTION to Johnathon Perry of Cornwall for "ELIZABETH TAYLOR"

RUNNER-UP FOR THE MOST INCORRECT SOLUTION to John Cole of Alton for "JAMES STEWART"







Congratulations to everyone. Hope you like the Automata bags of goodies and surprises, and to the outright winner, we hope your dreams come true for you and your companion in the U.S. of A. Finally, to those of you who didn't win, remember "It's not the winning that's the thing, It's playing the game"

with love from *Uncle Groucho*